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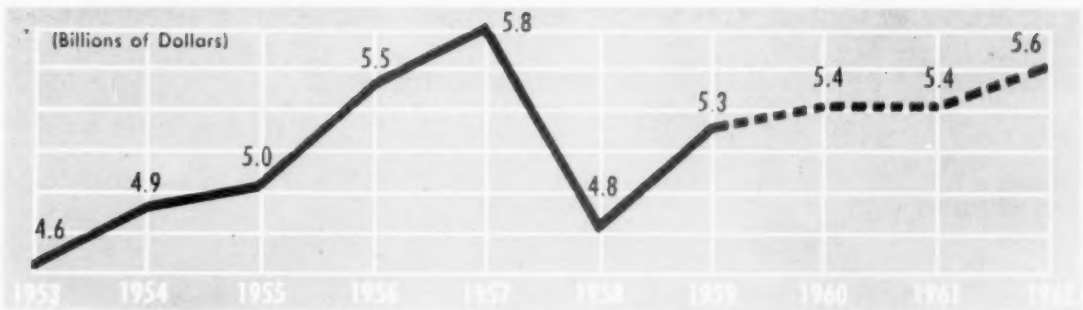
1959

PETROLEUM WEEK

A McGRAW-HILL PUBLICATION



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Price 50 Cents

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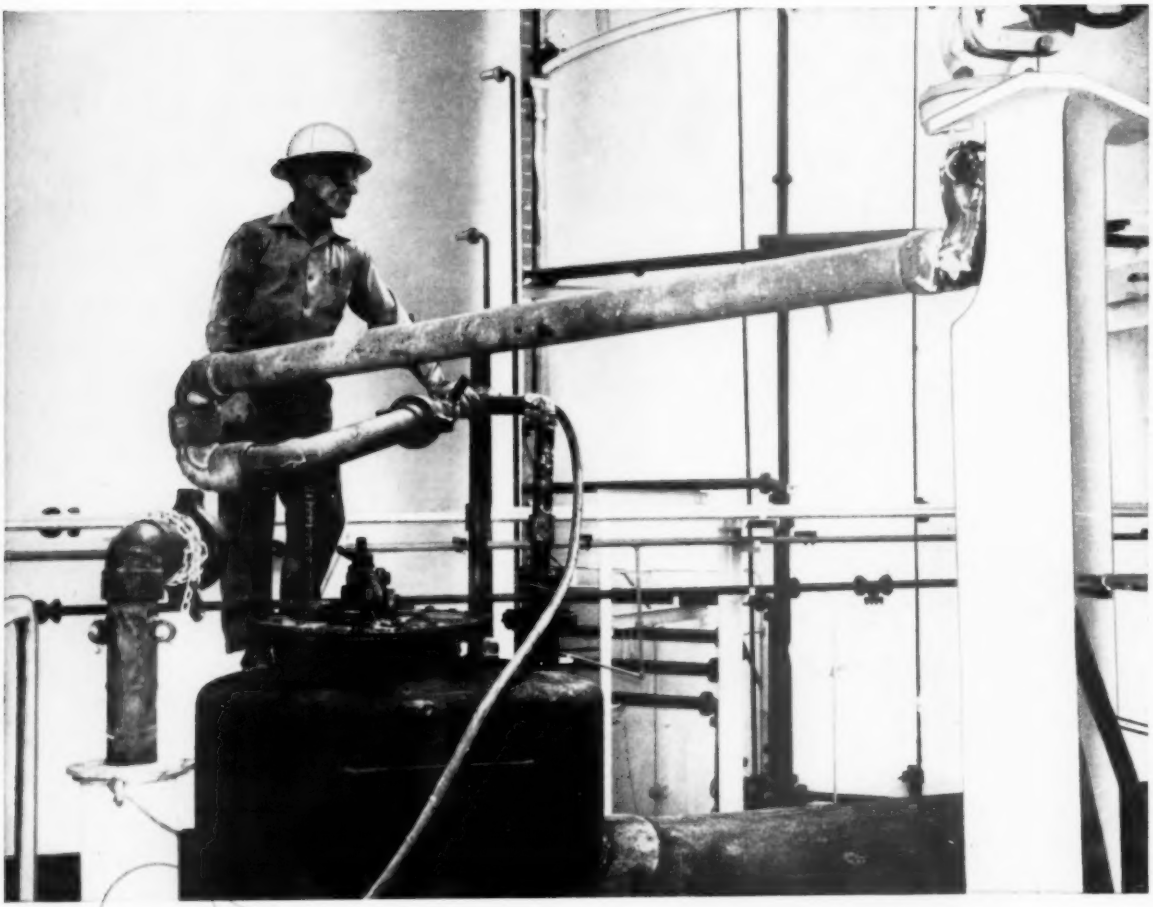

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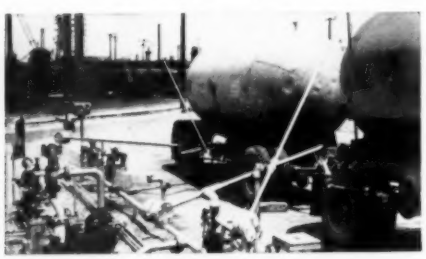

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PETROLEUM WEEK

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INSIDE *Slant*

INDUSTRY TOO COMPLACENT

Perhaps the greatest current deterrent to exploration is the attitude or frame of mind of the industry.

This message was laid before a recent meeting of the American Assn. of Petroleum Geologists by W. J. Murray, Jr., member of the Texas Railroad Commission.

He also observed that the success of conservation measures may have had something to do with the changed attitude seemingly apparent today.

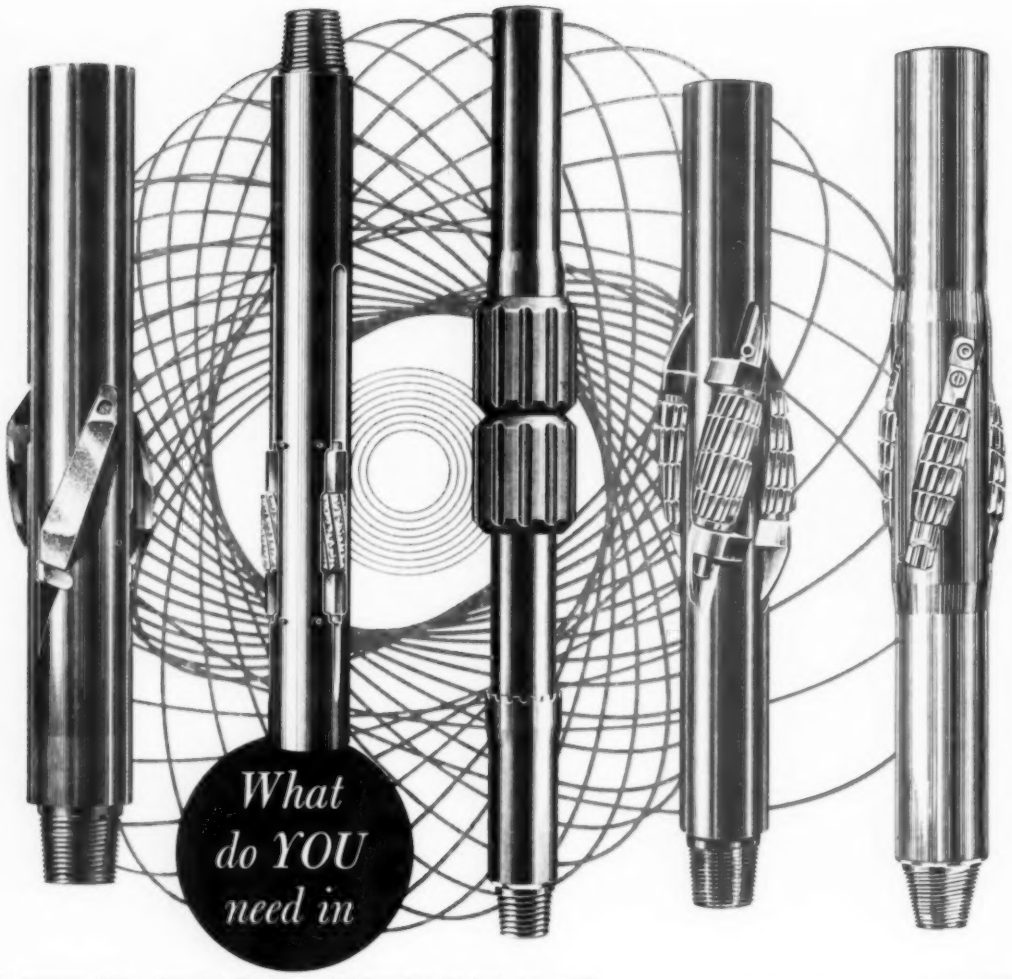
Murray also told the group that a recent visitor in his office had complained that there was no lack of potentially prolific new oil provinces in the nation, but that either the geologists or the committees that pass on their recommendations no longer have any "guts."

The regulatory official also said his visitor had agreed with him that conservation and proration had made the oil industry bankable, but decried the fact that the wildcatter was beginning to adopt the attitude of the banker.

The conclusion:

Why risk money wildcatting when it is a surer thing to spend development funds on inside locations, or at least on extensions to known production.

LeRoy Menzing
EDITOR



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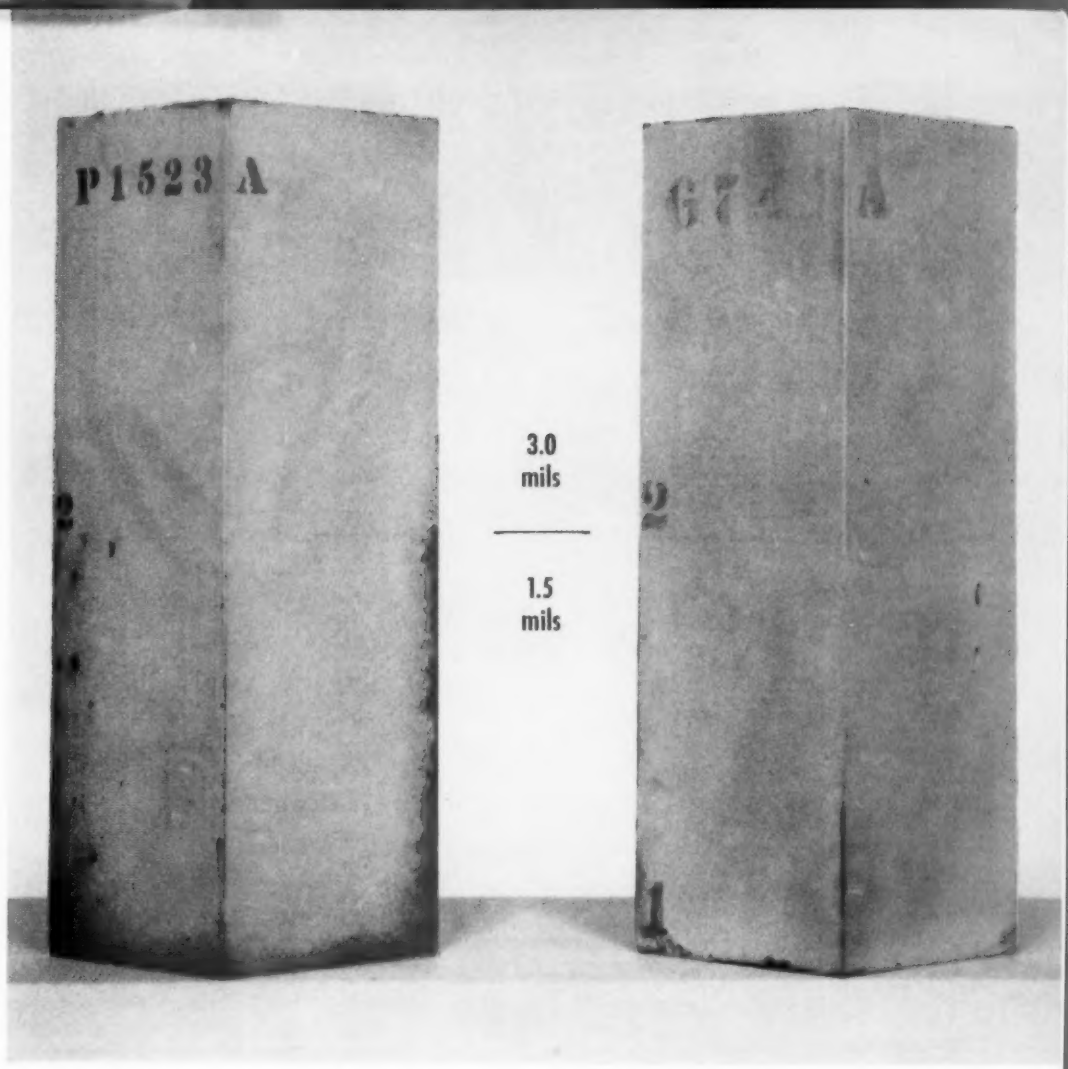


Never before such durable protection, never before such lasting appearance in metal protective paints.

Proof anti-corrosion finish paints made with M50® pigment give unique freedom from bilging

Compare . . . for color . . . the gray alkyd finishes on the two exposure test angles shown above.

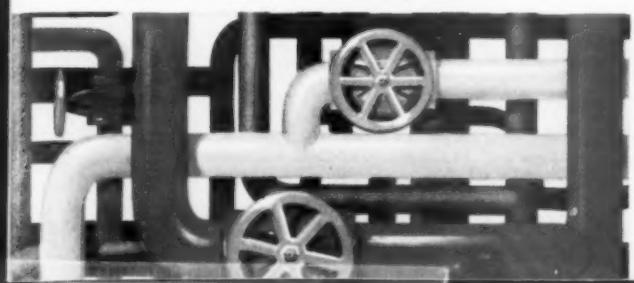
By all previous concepts for anti-corrosion paints, the one on the left should be the darker, should show some splotchiness . . . even though the paint on both angles came out of the same can. That's because the angle on the left was exposed (four years, 45° S) to the heavily sulfur-laden industrial atmosphere of Perth Amboy, N. J., while the angle on the right was exposed (four years, 45° S) only to the normal atmosphere found at National Lead's Sayville, L. I. Test Station.

As you can see, the color difference . . . bilging . . . that you might expect from SO_2-caused precipitation simply has not developed in this paint made with *M50* pigment.

Combined with its unique resistance to discoloration by the chemicals found in industrial atmospheres, fused M50 basic lead silico chromate pigment demonstrates exceptional rust inhibitive action.

Now, with *M50* pigment, your regular paint suppliers can provide standard or heavy-coat anti-corrosion primers, intermediates and finishes with superior rust inhibition, superior weather resistance, and excellent tintability. Paints that are more durable and don't bilge. The *M50* pigment is suitable for use with a wide variety of vehicles.

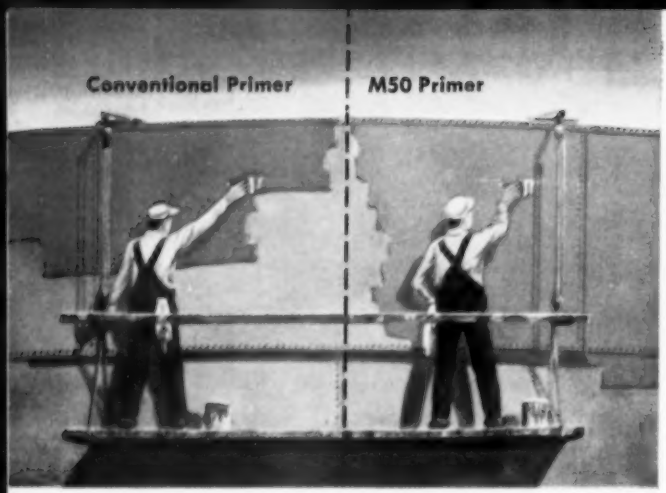
Color code paints look better longer, are more protective, too, with M50 pigment.



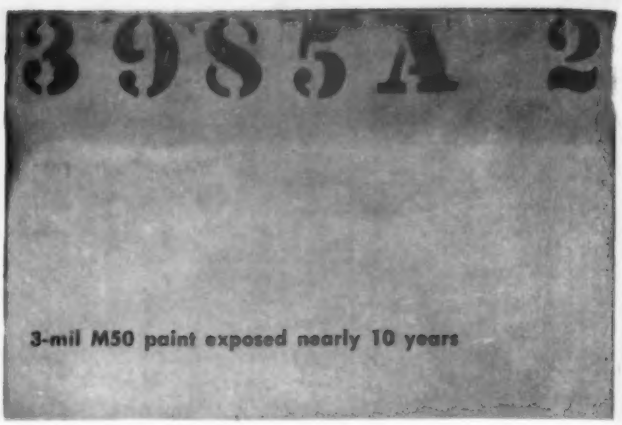
See, on the next page, more details . . . and how you can get these new, much more durable anti-corrosion paints.

M50 pigment is a product of National Lead Company

General Offices: 111 Broadway, New York 6, N. Y.



Weight for weight, anti-corrosion paints made with high-bulking M50 pigment cover 40% to 60% more steel.



Mil for mil, M50 paint films show better rust-inhibitive performance, lengthen the painting cycle interval.

Here's evidence M50 pigment paints reduce anti-corrosion maintenance painting costs two ways

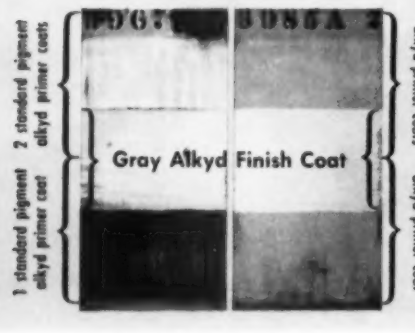
On the preceding page you have seen evidence that *M50* pigment paints are unique among anti-corrosion paints for anti-bilging properties. Exposure tests at National Lead's Sayville, L. I. Test Station have demonstrated these metal-protective paints are also unique for their anti-corrosion action, their weather-resistance, their color stability and many other performance characteristics.

Above you see evidence that *M50* pigment paints are equally unique in their ability to provide anti-corrosion maintenance painting economy. The illustration at left gives you a visual comparison between the coverage of a conventional anti-corrosion primer and an equal weight of an *M50* counterpart of this same primer (Fed. Spec. TT-P-86a, Type I). Clearly a given weight of *M50* pigment paint goes further.

The picture at the right shows the condition of a 3-mil *M50* pigment *primer* exposed nearly 10 years *without a finish coat.* You can see that even in this severe test . . . an unprotected primer . . . anti-corrosion action is still being obtained. The repainting surface is still in good shape. Weather has not adversely affected protection. Imagine how many years of service you can anticipate from anti-corrosion *M50* finish coats applied over anti-corrosion *M50* primers in the normal or heavy coat systems!

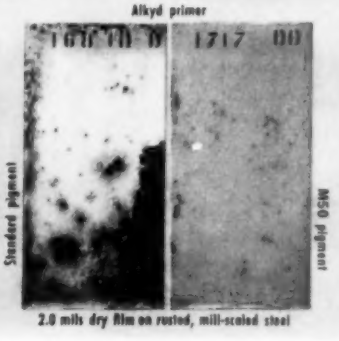
Based on cost per sq ft per year, M50 pigment paints can greatly reduce the cost of your anti-corrosion maintenance painting.

Why M50 Defense in Depth paints give anti-corrosion beyond all former concepts


2 standard pigment alkyd primer coats
1 standard pigment alkyd primer coat
Gray Alkyd Finish Coat
2 M50 pigment alkyd primer coats
1 M50 pigment alkyd primer coat

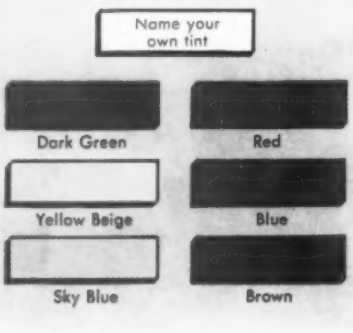
Exposed 9 years, 45°S. Each coat 1.5 mils

Proved corrosion and weather resistance



Exposed 45°S, 1 yr ind. atmos., 1 yr normal atmos.

Proved outstanding for film strength, durability



Colors above available in conventional and heavy-coat paints

A wide range of stable colors can be produced

Are you concerned with tank or structure maintenance painting in your firm? If so, you are invited: (1) to visit National Lead's Sayville, L.I. test station, where you will see the results of the 20 years research that lies behind the *M50* pigment particle and the more than 10 years of exposure testing that lies behind *M50* pigment Defense in Depth paints; (2) to send coupon below for National Lead booklet, "Defense in Depth" and typical *M50* tank paint specifications.

Next time you purchase, specify *M50* pigment paints. Any paint manufacturer can supply you.

M50 Defense in Depth

National Lead Company,
111 Broadway, New York 6, N. Y.

Gentlemen: Please send me the "Defense in Depth" booklet together with typical tank paint formulas and color chips that I can use in specifying M50-type tank paints.

Name_____ Title_____

Firm or Dept._____

Address_____

City_____ State_____

General Offices: 111 Broadway, New York 6, N. Y.

DEPT/Opinions

Views That Make News

"Whether we are engaged in finding and producing oil, refining it, or moving it to market, each of us has the same ultimate objective. All our efforts must sooner or later lead to that one essential action—the profitable sale."

—C. A. Foster, Jr.
Vice-president, marketing
Shell Oil Co. of Canada, Ltd.

"I term the threat [to the percentage depletion provision] as the gloomiest of all adverse factors in the current economic outlook for the petroleum industry. . . . I simply say that the abolishment or any material reduction in this proven formula of depletion will not only wreck the independent producer and put him out of business, but will stagnate the entire industry to the point of economic chaos and national disaster."

—Eugene McElvaney
Senior vice-president
First National Bank in Dallas

"Oil companies have consistently destroyed the free enterprise system and have never actually been in competition, because of controls over crude oil production, prices, and marketing outlets."

—John A. Touhey
Executive secretary
California Federation of Service Stations, Inc.

"We look forward in the far western states to a population increase of nearly 50%; total spendable income should be up almost 75%, and motor vehicle registrations will double the present 9.7-million by 1970.

"This growth will bring about increased demands for petroleum products—excluding fuel oil—from 765,000 b/d this year to 1.3-million b/d in 1970."

—W. G. King, Jr.
Vice-president, marketing
Richfield Oil Corp.

"The decline in recent years in exploration and drilling has been influenced by the lack of incentive to continue increasing capacity faster than demand. It does not mean that opportunities to locate new petroleum supplies are exhausted."

—Morgan J. Davis
President
Humble Oil & Refining Co.
Houston, Tex.

"Financing the national highway program is important. But it is unfair to place an additional burden on motorists, who already pay federal and state gasoline taxes averaging nine cents a gallon. If all the direct federal highway user taxes they now pay were applied to this program, there would be adequate funds for the federal share of anticipated costs. Furthermore, 20 of the states now use gasoline tax money for purposes other than highways. Motorists rightfully oppose this tax diversion, which should be eliminated."

—K. S. Adams
Chairman of the Board
Phillips Petroleum Co.

"I feel confident that the 1959 sales volume for the industry will show an increase of from five to seven percent. I am also pleased to report that . . . our profits for the first quarter are likely to exceed the same period last year by at least 30 percent."

—W. Harold Rea
President
Canadian Oil Companies, Ltd.

"The various state conservation bodies which regulate the production of crude oil may now find that Washington will be in a position to regulate the supply of crude oil to equal the demand through opening or closing the valve on imports.

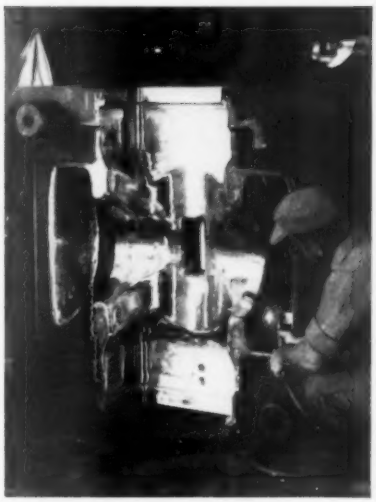
"One other aspect of mandatory controls is extremely disturbing. The fact that such controls can be invoked at all is a result of the national security clause of the reciprocal trade agreements act. Yet, as pointed out by The New York Times, the 'national security' argument for these controls is not convincing:

" 'If serious attention need be paid to assuring sufficient petroleum for future emergency needs, there is much to be said for keeping as much of our oil as possible in storage under the ground and increasing, not reducing, our use of imported oil.' "

—J. W. Foley
President
Texas Co.

Petroleum Week *will publish each week comments from readers on timely, pertinent subjects. Such expressions are welcome.*

Address all such correspondence to LeRoy Menzing, Editor, Petroleum Week, *330 W. 42nd St., New York 36, N.Y.*



QUALITY CONTROL AND PRESSURE CONTROL

In the picture above, a skilled Cameron die-maker is hand polishing half of a die set which will be used for forging a Cameron Type "F" Blowout Preventer body.

Why do we make our own dies for our own specially designed forging presses? Why do we make our own steel? Isn't this carrying things a bit too far? We don't think so. When a Cameron pressure control for drilling or producing leaves one of our plants we want to know that it will do everything expected of it – in Alaska, South America, Sumatra or anywhere experienced operators drill for oil. Our objective has always been pressure controls which are the finest of their kind. But the best in design requires the best in manufacture for safe, economical performance. So we leave no stone unturned. Quality control from the drafting board to the delivery dock is the reason you can COUNT ON CAMERON no matter where you drill or produce.

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Good Wells Make Good News

A Monthly Report on Wells That Are Now Worth More

April 17, 1959

Every day Dowell engineers develop profit-building new ways to use acid to help operators get better production from oil and gas wells. Here are four examples:

- **St. Landry Parish, South Louisiana** (Old Gas Well) Production from the tight Miocene sand between 9533 feet and 9543 feet was only 1600 mcfd, with 62 barrels of distillate per million. With the help of the Dowell engineer, the operator selected a treatment consisting of 2500 gallons Super Mud Acid and 1500 gallons 15 per cent inhibited acid. Both acids had a Dowell silicate control agent added. This treatment was selected because of past success using about 200 gallons Super Mud Acid per foot of pay. After clean-up, gas production rose to 2400 mcfd. The $1725 treatment paid out in two weeks.

- **Hansford County, Texas Panhandle** (New Gas Well) This wildcat was completed through perforations from 6535 to 6546 feet. Producing zone was the Atoka lime. Before treatment, the well tested 1250 mcfd. Dowell acidized using two strengths of acid with silicate control and demulsifying agents added. 5000 gallons of 7½ per cent acid was followed by 6500 gallons of 4 per cent. Treatment was down casing at 9 bpm. After well had cleaned up, it tested 4000 mcfd.

- **Carter County, Oklahoma** (New Oil Well) Before treatment, this well tested only a show of oil. It had been completed into the highly reactive Upper Chimney Hill lime from 7912 to 7922 feet. The operator called Dowell. 7500 gallons of Retarded Acid were used in a treatment to open up a larger drainage area. After clean-up, the well tested 14 boph.

- **Southern Alberta, Canada** (Water Disposal Well) This old oil well was originally completed open hole in the Madison dolomite from 8557 to 8790 feet. After depletion, the operator wanted to convert it to water injection, but well would not take water at 2000 psi. Well was corroded. Also iron hydroxide precipitate had resulted from previous acid jobs, and deposits of paraffin and other heavy hydrocarbons were suspected. To treat all problems simultaneously, Dowell recommended Stabilized Acid and magnesium pellets. 300 pounds of pellets in gelled water were followed by 1000 gallons Stabilized Acid. After clean-up, well took water on vacuum.

In some wells, tailored acid treatments by Dowell have succeeded where all other stimulation efforts have failed. Whatever your production problem, call your Dowell representative. He may be able to save a well that would otherwise be abandoned. For full information, call any of the 165 Dowell service points. In Canada, call Dowell of Canada, Ltd.; in Venezuela, United Oilwell Service. Dowell, Tulsa 1, Oklahoma.

Services for the oil industry DOWELL
DIVISION OF THE DOW CHEMICAL COMPANY

60-Second Summary / WHAT'S HAPPENING IN OIL

April 17, 1959

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The Justice Dept. is about ready to spring new antitrust charges. Although they may be filed singly, in scattered cities, the suits will be part of a broad attack against several majors, charging "control" of certain area prices through commission and company-owned stations. . . . p. 22

•

Venezuela has taken its first steps towards controlling oil production to stabilize prices. It set up a commission to regulate conservation and "merchandising" of all oil companies. . . . p. 16

•

Only minor process changes are needed to make "super" jet fuels, Indiana Standard scientists say. It's a matter of pulling alkyl naphthenes from present jet blends. . . . p. 48

•

Capital expenditures by the oil industry and business generally are turning upward sharply from the depressed 1958 rates. Oil, which is boosting outlays by 11% in 1959, will invest mostly in modernization of existing facilities, rather than in expansion. . . . p. 15

•

Contractors are battling rough terrain and unfriendly tribes to build the 24-in. Sahara crude line. It is designed to move 200,000 b/d 450 mi. to the Mediterranean from the Hassi Messaoud field. . . . p. 56

•

The recommended utility-type controls over natural gas producers may lead to more intrastate gas sales. But as of now, demand within producing states isn't very large. . . . p. 17

•

Shell-BP Development is appraising its prospects in Nigeria after a year of test production. The 22-year search there so far has brought "disappointing" results. . . . p. 58

•

How will the oil industry spend its second 100 years? Esso Standard's William Naden suggests that it could be as a branch of the Interior Dept. unless oil men learn to solve their own problems. . . . p. 72

•

Three pilot waterfloods in Saskatchewan may improve the outlook for heavy crude. Operators hope to boost recovery rates substantially; they're now only 4% to 5% generally. . . . p. 27

•

Venezuela's much-heralded 60-40 split of oil profits looks more like a 68-32 division. That's the estimate of a Mene Grande official, based on 1958 operations. . . . p. 60

Up to the Minute

SIGNIFICANT LATE NEWS

AT-A-GLANCE Copyright PETROLEUM WEEK

April 17, 1959

The federal government will hold an offshore lease sale May 26, its first since 1955. The bids will be on 80 tracts, covering 458,000 acres, in the Marquesa area off the southwest coast of Florida. Bid opening will be in New Orleans. The government's move may have been prompted by the success of Louisiana's lease sale in February (PW—Feb.27'59,p8).

•

Two more Jersey Standard affiliates—Humble and Carter—want to import their own oil. They appealed on the same ground as Esso Standard and their parent: Jersey, which has the only quota, is not a refiner (page 18). The issue may be tough to settle. Denial of the appeals could play into the hands of other nonrefiners. And granting quotas to affiliates could create more problems.

The first week of hearings before the Oil Import Appeals Board indicated that import controls are headed for a court test. Several major companies charge that the allocations amount to "confiscation of property," give "unfair" advantages to competitors, and threaten relations with the Arab world.

•

Most segments of the oil industry would be affected by a tax bill being considered by the Texas legislature. The proposal, recommended by a House committee, would tax lubricating oils 2¢ a qt., increase the natural gas severance tax from 7% to 8% of market value at the well, and increase the franchise tax on corporations.

•

Canadian affiliates of some U.S. firms want their parents to step up imports of Canadian oil to Puget Sound refineries. The reason: The Canadian subsidiaries have suffered production cuts. And they fear that pressure is mounting for an Alberta-to-Montreal crude line, which could, in turn, bring pressure on eastern Canadian refiners to use more Canadian crude.

•

Jersey Standard has found oil again in Libya, in what is termed the country's "best test yet." The No. 1 Zelten, located about 100 mi. from the coast, tested about 100 bbl. an hour of sour, 37-gravity crude through 5/8-in. choke from about 5,400 ft.

•

The Alaskan legislature has passed a bill to regulate state mineral land leasing. It would limit a company or individual to 1-million acres, 500,000 of which could be in the tidelands or offshore. Most leases will be on a first-come, first-served basis, except that land in the vicinity of a producing well would be offered for competitive bids.

•

Standard of California and Gulf Oil have abandoned their joint offshore wildcat in the Bahamas at a total depth of 18,906 ft., after running four unsuccessful drillstem tests in mid-March.

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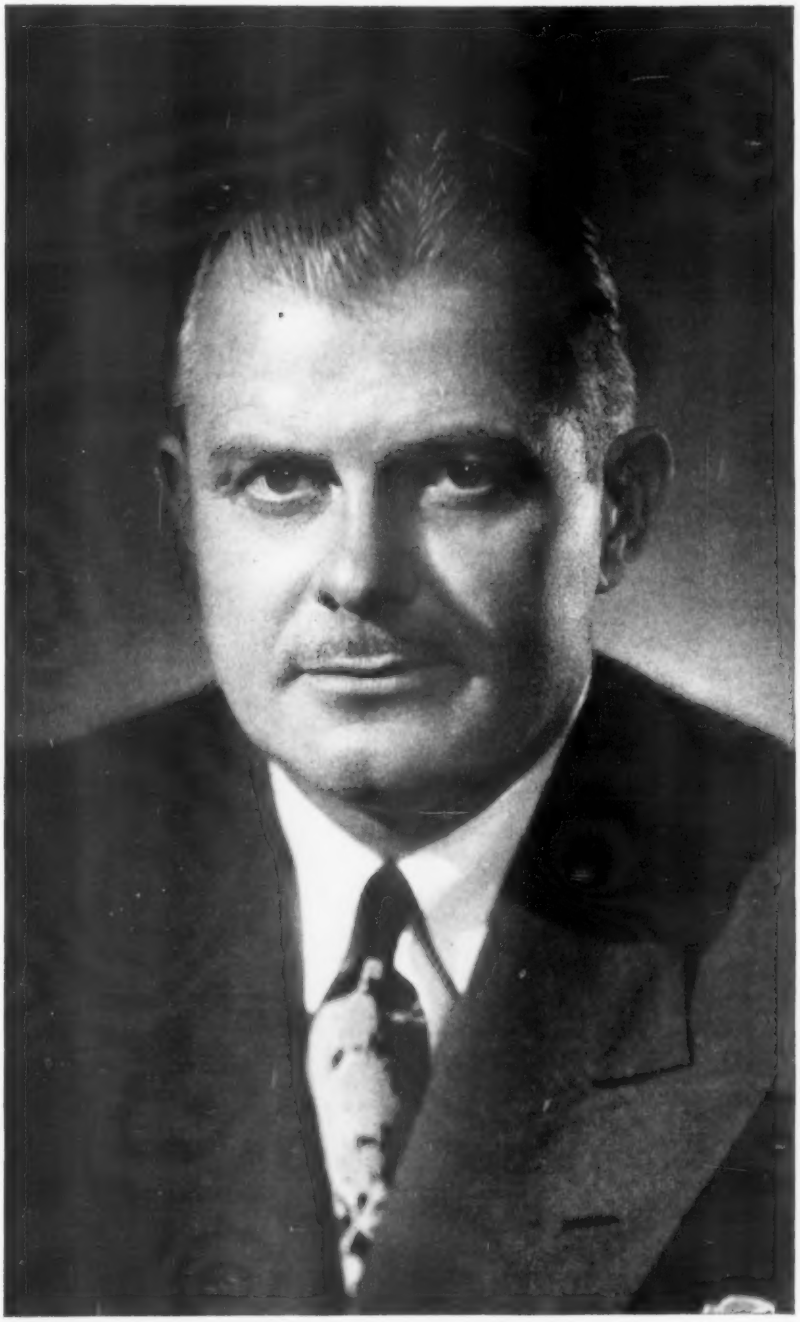
"The fighting, driving, progressive spirit of these people is indicative of the whole industry. The ability of the manufacturing companies to provide equipment and make it available through dependable distributors enables our industry to perform its vital function of serving consumers."



MR. K. S. ADAMS
Chairman and Chief Executive Officer
Phillips Petroleum Company

P.E.S.A.*

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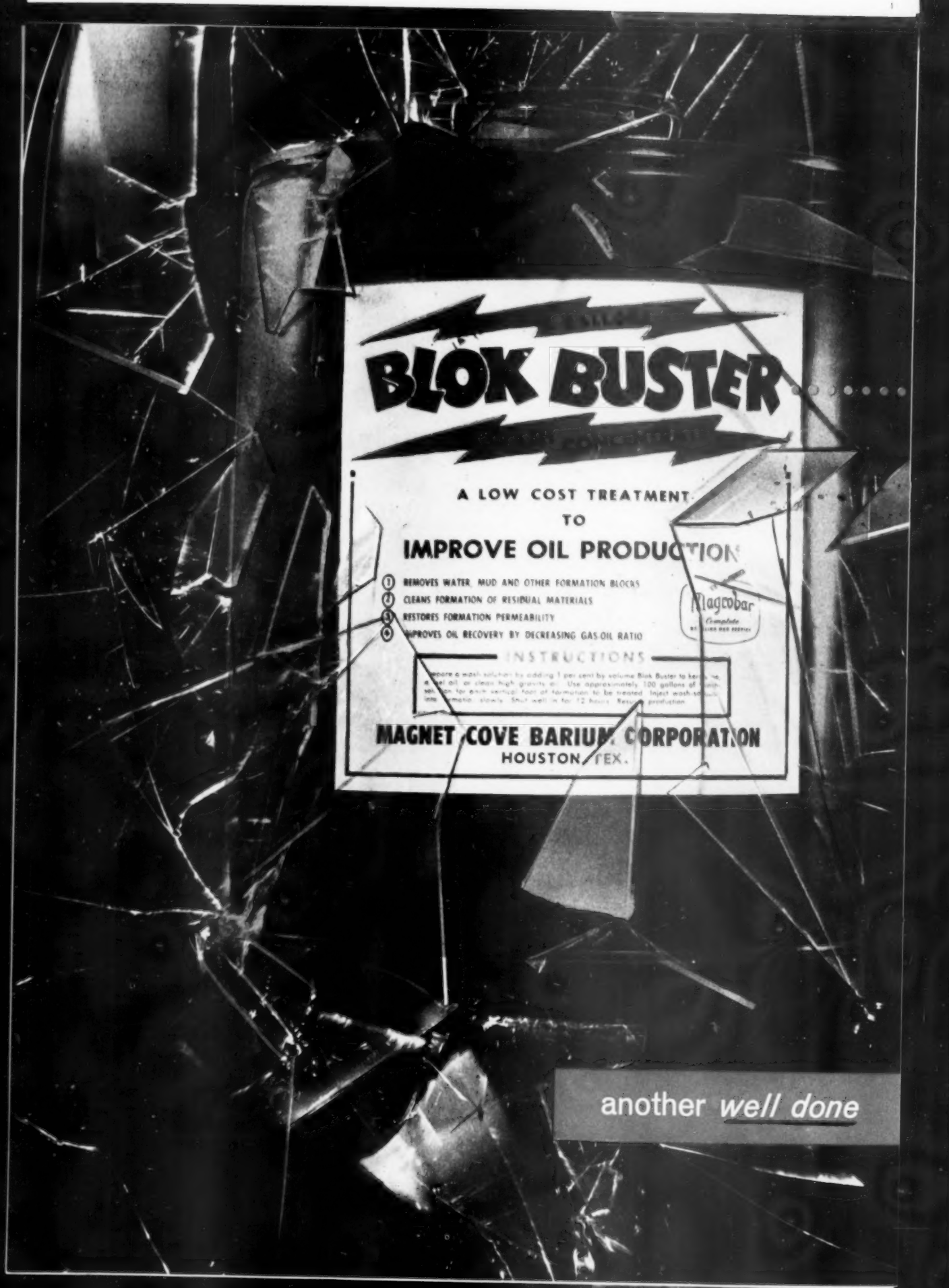
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Blok Buster increased production in these wells

Well did not produce as well as reservoir indicated	*Originally produced 10 BOPD from Dakota "J" sands. After a 10-gal. Blok Buster treatment, production was increased to 43 BOPD and is still pumping 36 BOPD five months later.*
Well did not resume normal production after workover	*Well producing 1 MMCF gas and 30 to 35 bbl. distillate per day from Frio was killed. Following workover, the distillate production was lost. After a 5-gal. Blok Buster treatment, production was increased to 1.5 MMCF and 11 to 14 bbl. distillate per day. Two months later this production is still holding.*
Well did not increase following hydraulic fracturing	*Well had average production of 5 BOPD and 20 bbl. water. Following fracturing operation, well produced exactly same. Using 35 gal. Blok Buster, production after 21 days was increased to 16 bbl. oil and 11 bbl. water per day.*

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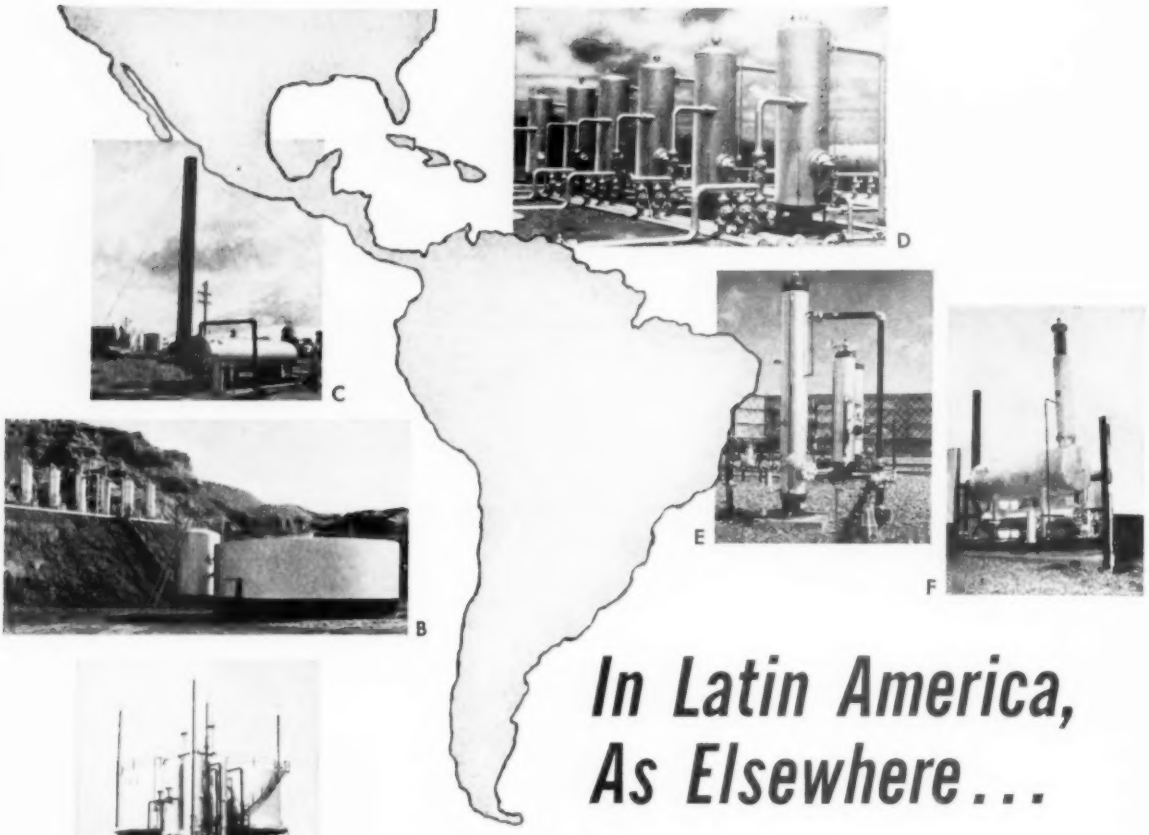

(A) BS&B Separators, Super 70 Valves, Controls and Accessory Equipment . . . Lake Maracaibo, Venezuela.

(B) BS&B Freewater Knockout and Vertical Separators . . . Talaras Field, Peru.

(C) BS&B Series 70 Internal Firebox Heater . . . La Venta Field, Tabasco, Mexico.

(D) BS&B Vertical Separators . . . Venezuela.

(E) and (F) BS&B Glycol Dehydration Unit . . . Chile.

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PETROLEUM WEEK
April 17, 1959

Capital spending plans point to strong growth

	1958 Actual	1959 Planned	% Change '58 - '59
	(millions of dollars)		
All Business	$32,091	$34,209	+ 7%
All Manufacturing	9,761	10,472	+ 7
Petroleum Industry	4,819	5,338	+ 11
Electric & Gas Utilities	6,088	6,182	+ 2
Chemical Industry	1,320	1,386	+ 5
Iron & Steel Industry	1,217	1,180	— 3
Automotive Industry	558	709	+ 27

	1958 Actual	1959 Planned	% Change '58 - '59	Preliminary Plans 1960	1961	1962
	(millions of dollars)			(millions of dollars)		
Drilling & Production	$3,341	$3,742	+ 12%	$3,779	$3,817	$3,970
Processing	665	698	+ 5	670	750	765
Transportation	317	333	+ 5	390	332	325
Marketing	404	469	+ 16	441	454	472
Other	92	96	+ 4	83	88	77
Total	$4,819	$5,338	+ 11	$5,363	$5,441	$5,609

Data for petroleum industry excludes bonus payments for leases and natural gas pipelines. Latter are included with utilities.

Petroleum To Pace Major Industries

The petroleum industry, during 1959 and in the immediate future years, will spend more capital funds for modernization than ever before.

That's indicated by the 12th annual capital spending survey of McGraw-Hill's Dept. of Economics, which tabulates the latest company estimates of their capital expenditures for the current year and provides a preview of outlays now planned for the next three years.

Oil's capital expenditures in 1959 will rebound sharply from the depressed level of 1958, jumping 11% to $5.3-billion. The gain will be the sharpest for any major industry that spends more than $1-billion.

Business generally is scheduled to spend $34.2-billion in capital outlays in 1959, up 7% over 1958 (table, above). That level will still be $4-billion under the record expenditures of 1957.

For the petroleum industry, the planned spending for 1959 appears to be the start of an upward trend, with capital budgets already showing planned investments of $5.3-billion for 1960, $5.4-billion for 1961, and $5.6-billion for 1962.

And while none of the present advance plans show that oil's capital spending will reach the peak $5.8-billion level of 1957, chances are that future revisions in planned spending for any one of the next three years could boost the total sharply.

Such a prediction, of course, assumes a continued gain in business activity, for oil appears to be more prone than most other industries to trim capital budgets in periods of recession. This happened in 1958, for instance, when capital outlays were cut $1-billion from 1957 (cover).

Despite the big jump in spending now planned for 1959, oil's rate of expansion of facilities may be the smallest of any recent year, while it concentrates on modernizing existing facilities.

Generally, the oil industry—unlike most other major industries—has always maintained adequate capacity down the line, with ample spare capacity.

But a considerable portion of the petroleum industry's capacity in all operating phases—producing, refining, transportation, and marketing—is obsolete, particularly in view of today's highly competitive conditions in the industry.

The trend to modernization of existing facilities as the major move to reduce costs to meet competition was the primary finding of a special report on modernization by PETROLEUM WEEK last fall (PW—Nov.7'58,p35). This latest survey of capital spending plans bears out that finding.

Capital spending in exploration, drilling, and production, slated to jump 12% to $3.7-billion, will be largely for modernization, though the impact of mandatory import controls may later lead to expansion in the form of increased drilling.

While the number of drilling rigs considered available for service are well in excess of current requirements, many of them are obsolete.

A recent survey, which showed 3,500 rotary rigs available for service, classified only 850 as less than five years old. About one-third of the rigs were purchased more than ten years ago.

The continued trend to deeper drilling and smaller reserves uncovered per foot drilled (page 17) puts greater emphasis on more efficient equipment —such as large pumps and greatly increased horsepower—to lower over-all costs of reserves found.

In production facilities, an increasing number of leases will be automated as cost-saving measures.

Also, more secondary recovery programs will require new equipment.

Some companies, viewing the tight-

er import allocations, already are reviewing their drilling budgets with a view of expanding their domestic programs in 1959.

Estimates are that by mid-year, an upswing in U.S. drilling activity will occur, with total drilling for the year expected to run higher than had been planned earlier.

The 5% hike in processors' spending, to $698-million, reflects the increasing expense of facilities to make modern fuels.

The industry is long on refining capacity, so little of the money to be spent by processors in '59 will go into new capacity.

Instead, refiners and gas processors are spending more on product quality improvement. One of the faster-spreading expenditures along this line is for computer control of processing units.

Modernization of gasoline finishing equipment, which has been the high-spending item among most refiners during the postwar period, will most likely represent a large part of the capital spending plans in the immediate future years.

The McGraw-Hill survey found that refiners plan the smallest increase in capacity of any major manufacturing group—only 1% in 1959 and another 1% by the end of 1962.

The 5% increase in spending for transportation facilities can be chalked up almost exclusively to modernization of operating equipment.

It will be most noticeable in crude and products pipelines.

Spending for automatic equipment to cut operating costs is now snowballing (PW—Apr.3'59,p44), and will more than offset the current fall-off in expenditures for new lines. (The Committee for Oil Pipe Lines recently reported that no major U.S. crude or products lines will be built this year.)

Spending for increased efficiency in equipment is also reaching a peak in other segments of oil transportation. Orders for the new 20,000-gal. tank cars, for aluminum tanks for tank trucks, and for special-alloy tanks for barges are now making up for the steep drop-off in tanker-building.

In marketing, where a jump of 16% in capital spending to $469-million is expected this year, nearly all of the funds will be for improving existing facilities.

Some marketers will be entering new territories and expanding in existing areas. But all of the major companies surveyed report that only a small portion of their capital budgets will represent expansion.

Primarily, their aim is to eliminate obsolete facilities to cut costs.

Venezuela Gets Set for Oil Controls

Venezuela this week took the first step toward its aim of controlling oil production to stabilize prices: It set up a "Commission for the Coordination of Conservation & Merchandising."

The new body is being formed under a government resolution authorizing the Ministry of Mines & Hydrocarbons to create an organization to "study and recommend regulation of oil merchandising and coordinate this with the oil conservation policy necessitated by the overriding national interest."

The new regulating commission apparently will have the power to rule on any contemplated changes in company production levels—or prices—though there is no clear-cut definition of just how the new setup will function.

The commission will include the Director of the Technical Office of Hydrocarbons, the Director of Economics, and the heads of the technical divisions of production and fiscalization and of conservation.

"For the best fulfillment of its function," the commission is empowered to request "whatever information is necessary from the companies, particularly that related to their programs of production and sales."

The Commission also may seek advice and assistance "from outside parties" whenever circumstances may require.

The new move is in line with the aims of Minister of Mines & Hydrocarbons Dr. Juan Pablo Perez Alfonzo, as outlined earlier in an exclusive interview with PETROLEUM WEEK (PW—Mar.6'59,p32).

The Minister this week left Caracas for the Arab Oil Congress in Cairo, where he will seek to promote further his concept of coordinated production controls among producing countries as a means of stabilizing world prices.

Perez Alfonzo recently issued a public blast against the crude price policy of British Petroleum Co. (which does not operate in Venezuela).

The Minister had called a press conference last week to announce that Venezuela was protesting to the British government (PW—Apr.10'59,p6).

Venezuela, he said, is "following closely and with great alarm the tactics of this British company." The latest crude price cuts by Cia. Shell de Venezuela, he said, were forced by BP, which previously dropped prices 18¢ (in the Middle East) when Gulf and Caribbean prices were lowered only 5¢ to 15¢ earlier this year. If all other Venezuelan producers follow suit, Venezuela may lose $180-million in annual revenues, he said. Creole and International Petroleum have since followed Shell in reducing their prices.

BP's action in raising prices only 15¢ in 1957 at the time of the Suez crisis—when U.S. prices went up 25¢—"has been interpreted as BP's first step to break the price relationship that has historically existed between U.S. Gulf Coast prices and those in the rest of the world," Perez Alfonzo said.

In view of the attempt to break the traditional price pattern, he added, "we producers must try to find means of collaborating to avoid arbitrary fixing of prices."

Perez Alfonzo reiterated that he is more concerned with world prices and markets than with U.S. import restrictions. He does not wish to speak of a "price war" at the moment, he said, but he does not consider the latest price drop justified.

The Minister said that Mideast crude prices now correspond to the 1953 level, although costs of finding and producing oil in the meantime have risen constantly.

COMING in Petroleum Week

The Arab Oil Congress, which opened in Cairo yesterday, could result in decisions that will have important long-range implications for U.S. oil men.

To keep its readers informed on what's going on in Cairo—and what it means to the U.S. oil industry—Petroleum Week has sent Wanda Jablonski, one of its Senior Editors and a recognized authority on the Middle East, to Cairo. She will report on developments at the Congress in a series of articles.

Intrastate Gas Sales May Increase

The utility-type regulation recommended for natural gas producers by a Federal Power Commission examiner last week may lead to more intrastate gas sales.

The decision, handed down after five years of study of the controversial Phillips rate case, provides FPC with the blueprint for federal regulation of the wellhead price of all gas going into interstate commerce (PW—Apr.10 '59,p9).

By selling to intrastate buyers, therefore, gas producers feel they can avoid the red tape and depressed prices which, they say, are inherent in the recommended federal regulation.

One current intrastate gas sale—the large purchase Texas Electric Service Co. is now firming up in the Old Ocean Field, Brazoria County, on the Texas Gulf Coast—shows the benefit of intrastate gas sales to the producer.

Texas Electric will reportedly pay 21.5¢ per Mcf, with 2¢-per-Mcf escalation each four years to a top price of 29.5¢ per Mcf for the final four years of a 20-year contract. The price is probably the highest ever on the Texas Gulf Coast.

Last week's examiner decision, on the other hand, gave Phillips a system-wide average price of 11.7¢ per Mcf.

Texas Electric wants to build a 300-mi., 24-in. pipeline to bring the gas to its Fort Worth generating plants.

There's real doubt, however, that existing intrastate markets can take all the gas that Texas producers may want to sell in the state.

One gas man says, "There will be an attempt to increase the number of deals like that proposed for the Old Ocean field. However, the big question is this: Is there enough industry in Texas so that producers can find a home for their gas intrastate?"

Plans for development of gas-using industries in gas-producing states could change the picture appreciably within the next few years.

First there is the increasing industrialization already under way in Texas, as well as in some other gas-producing states. And the use of gas as a feedstock in large planned petrochemical and natural gasoline plants will also beef up intrastate demand.

The proposed new regulations covering interstate sales of gas could be particularly troublesome to producers in determining rate bases and in the allocation of joint exploration costs.

The reason is that the 9.25% rate of return recommended by the examiner in the Phillips ruling has to be figured on a producer's rate base.

The rate base is equal to the original cost of a facility when first dedicated to public service, less depreciation, plus working capital.

The "original cost . . . when first dedicated" feature is the kicker. It may be mighty difficult—and in some cases impossible—to come up with a solid figure for this element in the rate base.

In addition, the examiner recommended that, in determining the allocation of joint exploration costs between oil and gas, cost must be based on the relative values of oil and gas reserves added by successful exploration—and not on the Btu. content of the gas produced.

Costs To Cut Drilling Incentive

Crude replacement costs will jump 200% by 1970, to $4.50 a bbl., Fred T. Haner, oil economist, predicted last week.

Haner, of Regional Industries Development Corp., based his prediction on the study of past trends over a 23-year period, he told producers attending the Eastern District meeting of API's Division of Production.

This sharp rise in replacement costs will reduce the incentive to drill to a new low, Haner predicted.

The index compiled by Haner, which dates back to 1935, shows that, even after allowance for rigid controls on imports and for "pricing flexibility" to permit crude price increases to cover replacement costs, the "incentive" to drill will decline to 31% of the 1957 level.

On the basis of exploration and development expenses, divided by the expected new reserves found per foot drilled, he deduced that 1970 replacement costs would be $4.50 a bbl.

He estimated that the price of crude at the wellhead may rise to $4.40 a bbl., and that equivalent gas revenues may be $1.07 a bbl.

That would leave a margin over costs of 97¢, compared with $2.36 a bbl. in 1957. But that doesn't allow for the shrinking value of the dollar. Based on projections of the wholesale price index of nonagricultural items, that 97¢ margin would be worth only 73¢, compared with $2.36 in 1957.

The major factors that will account for such a sharp change are costs of labor and materials and the continued general decline in barrels of reserves added per foot drilled.

"In 1938," Haner noted, "51% of the successful exploratory wells found new fields of more than 1-million bbl. In 1952 this figure was 19%."

He predicted that the liquid hydrocarbon reserves added per foot drilled will decline to 11.6 bbl. by 1960, and to 4.9 bbl. by 1970. And even with rigid controls on imports, and adequate prices to cover costs, drilling in the next decade will not top the 220-million ft. drilled in the U.S. in 1956.

By 1970, Haner forecast, U.S. footage will be down to 160.3-million ft., if imports are allowed to increase at the same rate as in the postwar period. And even if imports are held at about 1.9-million b/d, drilling will not exceed 217.4-million ft.

At these drilling rates, the indications are that domestic liquid hydrocarbon reserves will drop to 17-billion bbl. if imports are allowed to rise, or to 12.7-billion if imports are held constant.

The over-all result of the cost-price squeeze and the declining finding rate will be a tight pinch on smaller operators.

"The diminishing margin between cost and income," Haner said, "will reduce the financial incentive of smaller domestic firms to undertake extensive drilling programs.

"Some firms will necessarily deplete themselves out of business, or merge with other similarly affected companies for economies of size."

Major companies, Haner predicted, will become increasingly significant in drilling in the U.S. unless prices greatly improve.

Revolutionary changes in drilling techniques that would allow exploration "for a fraction of present costs" could bring more optimistic forecasts on finding rates and replacement costs, Haner observed.

But he noted that he had made allowances for some gradual improvements in techniques in compiling his estimates.

Barring radical improvements, Haner warned, it is becoming evident that "we are depleting available reserves at a rate which is dangerous to our national security."

Appeals Pour in to Oil Imports Board

A three-man government appeals board went to work this week on complaints from 36 companies that want larger allocations under the mandatory oil imports program.

The first case heard by the new Oil Import Appeals Board was that of Whale Oil Co., of Brooklyn, N. Y., which asked a higher allocation to import residual fuel oil. The company had received an allocation of 301 b/d under the Oil Import Administration's formula limiting residual imports to the 1957 level.

But in January, the company purchased 240,999 b/d of residual fuel, which were due at New York this week.

Companies without U.S. refinery capacity are also seeking allocations for imports. E. A. Gabriel, of Houston, was backed in his bid for an allocation by Crown Central Petroleum Corp., which formerly bought about 6,400 b/d of crude from Gabriel. Crown Central asked that Gabriel be given an allocation, conditioned on continued sale to Crown. Crown also is seeking an allocation of 20,000 b/d of crude for itself, in place of the present 3,860 b/d allocation.

And companies that have inactive refineries want to put their facilities on stream. Mancspo Refining Co. wrote the appeals board that it needs an allocation to supply its Long Beach (Calif.) refinery, which is out of service. The company intends to start the refinery again if the 1,400 b/d allocation it had under the voluntary program is restored.

Other companies claim foreign crude is preferable to domestic oil for their operations. Gonzales Chemcal Industries, for instance, asked for an allocation to supply an ammonia and ammonium sulphate plant at Guanica, Puerto Rico.

The Oil Import Administration's failure to make special provisions for asphaltic crude is also being hit. But OIA officials say they have no intention—at present, at least—of making any exceptions for any particular type.

Still other companies are asking higher allocations because of strikes and disasters.

Signal Oil & Gas Co. asked that the appeals board increase its crude and unfinished oil allocation from 3,200 b/d to 4,300 b/d in consideration of the Hancock Oil Co. refinery fire last year. Hancock, since the fire, has merged with Signal.

Aurora Gasoline is seeking an increased allocation because of a lengthy strike at its Detroit refinery, which reduced 1958 runs.

Standard Oil (N. J.) is questioning the Administration's decision to require a parent company to get a single import allocation for all of its subsidiaries.

Both Jersey and Esso Standard maintain that Jersey is simply a holding company, with no refinery capacity, and that allocations should be given separately to each company in the Jersey group.

Jersey Standard and Esso are also challenging the sliding-scale formula.

Two companies filed more than one petition to the appeals board. The Texas Co. sent one appeal for its crude and unfinished oil allocation, another for finished products. Standard Oil Co. of California filed four separate appeals. Texaco accompanies its appeal with the implication that it might test the legality of the 1958 extension of the Reciprocal Trade Agreements Act, the Presidential proclamation setting up the mandatory imports program, the import regulations, and the company's own allocations.

Most appeals will run headlong into a major governmental roadblock: The Oil Import Administration has about depleted the total volume available for division among importers.

The government is believed to have left only about 20,000 b/d to give appellants in Districts I-IV who want more crude and finished products.

Several companies that are appealing probably will be ruled against because of tight ground rules in the appeal procedure.

Regulations specify that appellants won't be permitted to quarrel with the determination by the President that imports be controlled on a mandatory basis. Nor can companies argue with the method used to divide allocations among importers.

But company attorneys indicate that they may indirectly attack the method of division by citing contracts that must be met, or by demonstrating the effect on their companies if allocations are not raised.

Fast action on import appeals may put the entire controls program into the federal courts sooner than had been expected.

Earlier, some companies had figured considerable time would be consumed by the appeals procedure. Although some firms believed they could, if they wanted, seek an injunction against the mandatory program without following the appeals route, most importers planned to go before the board before deciding on legal action.

Ringwood Gas Price Settled

The Oklahoma Corporation Commission is being credited with an assist in the settlement of a residue-gas price dispute in the Ringwood field.

The principals reached an agreement among themselves last week, but the action apparently was largely prompted by the commission's intervention.

The commission has been holding hearings to determine whether gas was being wasted and development of the field held back by the low price being paid for the gas.

The commission brought the dispute to a head last fall by ordering the field shut down until hearings could be held (PW—Dec.5'58,p25).

The subsequent hearings centered around whether the commission should classify the field as a gas field and set a minimum price.

The commission's conservation department recommended classification as a gas field.

The net result of the agreement reached last week by the principals was to put into effect higher prices sooner than called for under the original contracts.

The old contracts, made in 1952, provided that Oklahoma Natural Gas Co. would gather the residue gas, and that it would be processed by Warren Petroleum Co.

The only payment the producers got initially was 33⅓% of the value of the liquids removed from the gas. (This amounted to about 2¢ per Mcf.)

However, the terms provided that after Oklahoma Natural and Warren had paid for the facilities installed, producers would then get 40% of the value of the liquids, plus payment for the gas at a rate 6¢ per Mcf less than the prevailing price.

Under the new contract terms agreed to last week—but not yet signed—the producers will get 6¢ per Mcf, retroactive to Apr. 1, and the 40% payments beginning Mar. 1, 1960.

Industry's '58 Net Was 8% of Gross

Only three of the 25 largest U.S. oil companies in terms of gross income had an increase in net profits last year over 1957.

Over-all, oil company net profits in 1958 were almost 25% under 1957.

Not one of the first 11 companies in terms of gross income—which includes all the major international companies headquartered in the U.S.—had a gain in net earnings.

The three companies that did increase their net last year—Kentucky Standard, Continental, and Ohio Standard—represent three different types of oil operations.

Standard Oil Co. (Ky.), which had the largest percentage gain in net profits, up 11.3%, is strictly a marketing company. It operates in the Southeast, where sales of heating oils are relatively small.

Continental Oil Co., which had a 1.2% gain in net, is a relatively balanced integrated company, with nearly all of its earnings derived from domestic operations.

Standard Oil Co. (Ohio), with a gain of 0.5% in net last year, is also an integrated company with the largest part of its earnings from domestic operations. But Sohio's crude production amounts to only a quarter of its refinery requirements.

The large oil companies with extensive foreign operations fared no better than the primarily domestic companies as money-makers.

The best money-maker in relation of net income to gross again was Amerada Petroleum Corp.—strictly a producing company.

Amerada carried 21.9% of its gross to net income, down slightly from its 24.6% in 1957.

Ohio Oil Co., which is primarily a domestic producing company with only limited interests abroad, carried 11.7% of its gross to net.

Signal Oil & Gas Co., also with minor interests abroad, carried 12.2% of its gross to net. Signal, which in 1957 ranked 29th in terms of gross, moved into 24th position last year as a result of its merger with Hancock Oil Co.

The best money-maker among the largest companies was Standard Oil Co. of California, which carried 15.2% of its gross to net, compared with an average of 8% for all 25 companies.

The top-ranking company, Standard Oil Co. (N. J.) had a gross income nearly equal to the combined gross of the next three leading companies. It carried 7.2% of its gross to net.

Socony Mobil Oil Co., No. 2 in gross income and No. 5 in crude production, carried 5.3% of its gross to net. Gulf Oil Corp., third ranking in gross but the second largest producer, carried 11.8% of its gross to net. And The Texas Co., fourth in gross and third in production, carried 12.5% of gross to net.

Like increased earnings, gains in crude production last year were limited to only a few companies.

The largest gain was made by Signal Oil. It boosted its crude output by 16.3%, due almost entirely to its initial production in Venezuela.

Gulf's crude production was up 13%, all of which was accounted for by increases in Kuwait. And Socony had a 4.7% gain—all in foreign areas.

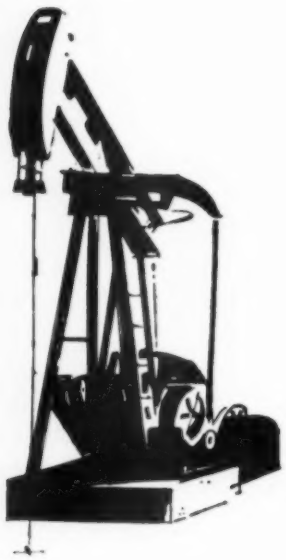
Texaco's gain of 4.5%, however, represented general gains in nearly all areas where the company produces. Texaco last year became the largest U.S. producer, with a net output of 385,867 b/d of crude.

How the Top 25 U.S. Oil Companies Rank

(Asterisks indicate change in rank)

	GROSS INCOME				NET INCOME				NET CRUDE PRODUCTION				REFINERY RUNS			
	Rank		1958	% Chg.	Rank		1958	% Chg.	Rank		1958	% Chg.	Rank		1958	% Chg.
Company	'58	'57	(Thousands)	'58 - '57	'58	'57	(Thousands)	'58 - '57	'58	'57	(b/d)	'58 - '57	'58	'57	(b/d)	'58 - '57
Jersey Std.	1	1	$7,712,257	— 3.3%	1	1	$562,475	—30.1%	1	1	2,028,000	— 4.0%	1	1	2,489,000	+ 2.5%
Socony Mobil	2	2	2,932,792	— 2.8	5	5	156,786	—28.9	5	5	644,853	+ 4.7	3	3	869,805	+ 1.8
Gulf Oil	3	3	2,783,421	+ 0.5	2	2	329,533	— 7.0	2	2	1,262,635	+13.0	5	5	698,133	+ 2.3
Texaco	4	4	2,475,630	+ 1.1	3	3	310,168	— 6.7	3	3	1,008,183	+ 4.5	2	2	1,124,680	+ 5.7
Indiana Std.	5	5	1,885,000	— 7.3	6	6	117,800	—22.3	7	7	285,474	— 7.2	6	6	640,648	— 1.1
California Std.	6*	7	1,688,527	— 3.0	4	4	257,759	—10.6	4	4	798,352	— 3.7	4	4	781,700	— 0.2
Shell	7*	6	1,647,132	— 5.6	7	7	116,563	—13.7	6	6	301,657	— 5.0	7	7	463,778	— 8.3
Sinclair	8	8	1,201,721	— 5.2	9	9	49,473	—37.6	8	8	171,731	+10.7	8	8	434,109	— 2.0
Phillips	9	9	1,072,867	— 5.6	8	8	84,237	—12.4	10	10	145,861	— 7.0	11	11	218,332	— 8.2
Cities Service	10	10	1,015,317	— 3.0	11*	10	44,892	—24.1	12*	11	117,106	— 4.2	9	9	251,784	— 5.5
Sun Oil	11	11	724,032	— 7.0	15*	12	32,061	—32.5	13*	12	109,732	— 9.5	10	10	227,249	— 9.7
Continental	12	12	671,470	— 1.6	10	13	47,465	+ 1.2	9	9	150,984	+ 0.9	16	16	148,768	+ 1.2
Tidewater	13	13	552,944	— 7.0	25*	19	2,616	—92.5	16	16	85,627	— 8.4	12	12	200,222	— 5.1
Atlantic	14	14	552,425	— 5.0	13*	17	33,825	— 5.0	11*	13	119,298	+ 3.0	13	13	186,703	— 6.0
Pure Oil	15	15	478,296	— 6.8	16*	18	28,822	—18.9	21*	20	59,535	— 9.6	15	15	152,032	+ 2.8
Union Oil	16	16	412,592	— 5.6	18*	15	24,999	—34.6	14	14	93,088	— 9.2	14	14	164,518	— 6.6
Ohio Std.	17	17	394,789	— 6.4	19*	22	24,049	+ 0.5	22*	23	31,101	— 6.0	18*	19	128,119	+15.7
Sunray	18	18	372,285	— 4.9	12*	11	40,664	—15.4	18	18	74,301	— 9.0	20	20	103,099	— 5.0
Kentucky Std.	19*	20	296,933	— 2.2	23*	25	14,053	+11.3	...	...	...	...	...	...	...	...
Ashland	20*	19	280,125	—12.3	24*	23	10,332	—36.3	24	24	8,128	— 6.3	17	17	134,750	— 1.7
Ohio Oil	21	21	274,401	— 6.1	14	14	32,156	—22.5	15	15	90,059	— 5.8	22	22	41,425	— 0.2
Richfield (Calif.)	22*	23	258,208	+ 1.1	21	21	20,094	—28.7	20*	21	62,033	— 5.4	19*	18	119,044	— 0.3
Skelly	23*	22	255,661	— 3.6	17*	16	27,687	—24.7	19	19	64,076	— 7.2	21	21	48,971	— 0.1
Signal	24*	29	144,920	+ 3.6	22*	24	17,483	—17.2	22	22	57,200	+16.3	23*	...	18,800	...
Amerada	25	25	102,782	—11.7	20	20	22,485	—24.9	17	17	79,870	— 9.3	...	...	...	...

if oil production is YOUR business



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What's New / IN THE INDUSTRY

A high-pressure gas-condensate discovery has been tested by Tidewater Oil Co. in Cameron Parish, La. The company's No. 2 Lacassane, 4 mi. east of Chalkley field, flowed at the rate of 2.6-million cf/d with 87.7 bbl. of 48.2-gravity condensate per million of gas through ⅛-in. choke and perforations at 16,112-30 ft. in the Miocene. Calculated bottomhole pressure was more than 14,000 psi., and flowing tubing pressure was 11,300 psi.

•

The U.S. Supreme Court is expected to start hearings this week on the Arapahoe Pipe Line case. To be decided is whether a pipeline company can include borrowed money in its rate base. The Arapahoe case stems from alleged violation of 1941 Elkins Act consent decree limiting dividend payments of shipper-owned pipe lines to 7% return on property owned and used.

•

The Oil, Chemical & Atomic Workers Union will hold a bargaining election at Indiana Standard's Casper (Wyo.) refinery. The union announced that Indiana has agreed to an election Apr. 23 at Casper. The workers there are currently represented by the Central States Petroleum Union. OCAW recently won representation at Indiana's Sugar Creek (Mo.) refinery.

In union developments elsewhere, clerical employees in Gulf Oil's Philadelphia sales division voted 360-35 to reject OCAW.

•

The Texas Senate was scheduled to take action this week on a revised common-purchaser bill. The bill, which has been under study for some time, specifies that pipelines owned by common purchasers must take ratably oil produced in areas served by the lines.

•

The Federal Aviation Agency has ruled that only cement will be used on Washington's new jet-age international airport. The agency rejected protests from asphalt producers that asphalt also be considered for the paved areas to be used by aircraft at the Chantilly (Va.) airport. The ruling contrasts with the Air Force's acceptance of asphalt's elegibility for portions of runways (PW—Mar.20'59,p19).

•

Saskatchewan Power Corp. may buy a lease interest in a southeastern Alberta gas field. The utility is currently negotiating with Britalta Petroleums, Ltd., and Crescent Oil & Gas Corp. Final approval depends on the procurement by the utility of a permit from the Alberta Oil & Gas Conservation Board permitting export of the gas to Saskatchewan.

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Louisiana will retain its present depth bracket oil allowable through May, according to Ashton J. Mouton, state conservation commissioner. The allowable has remained at 34% of the March, 1953, formula since October.

•

California's Gov. Edmund (Pat) Brown has indicated that he'll try to apply his proposed severance tax to imported oil. Brown's tax measure, which hasn't yet had legislative committee consideration, would impose 2% levy on severance of crude and natural gas, yielding an estimated $19.3-million per year.

HAMONDFLOTE* plastic COVER CRASHES CONSERVATION BARRIER

For over one year Sohio has tested a HAMONDFLOTE COVER installation at their Andover, Ohio bulk station. Tests involved mechanical operation, general performance and conservation characteristics.

Based on the results of tests SOHIO HAS PURCHASED SIXTEEN ADDITIONAL HAMONDFLOTE COVERS for their field conservation program.

. . . And here's what the man in charge of Sohio's station says:

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The savings were apparent a week after it was installed as no fumes could be detected by nose through the top manhole cover.

It has not caused any trouble as far as filling or measuring the product or overall depth of tank (as for water or contamination of product) since it was installed. I would highly recommend the HAMONDFLOTE COVER for all products, especially gasolines. "

Robert Runyan,

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Looking Ahead in Washington

McGraw-Hill
Washington
Bureau
April 17, 1959

Watch for possible gasoline price-fixing charges against four or five major oil companies. The Justice Dept.'s Antitrust Division has been investigating dealer complaints about the companies for three months. Now the antitrusters think they have enough evidence to proceed formally. And there seems to be little doubt that they are about ready to act. Antitrust chief Victor R. Hansen recently wrote Rep. James Roosevelt (D., Calif.): "Steps are being taken to initiate appropriate enforcement action."

One or more federal grand juries may be asked to hand down criminal indictments. The government has a choice of civil or criminal action. But in past cases, the criminal route, via grand juries, has usually been chosen—because grand juries are able to subpoena evidence which the government otherwise might not be able to see.

•

At issue will be the use of company-owned and commission stations by major gasoline suppliers. The National Congress of Petroleum Retailers, along with state dealer groups and individual members, complained to the Justice Dept. that companies were using "strategically located, high-gallonage" outlets to control gasoline prices. Ten major oil companies were named in the original dealer complaint. The dealers cited company marketing practices in 60 separate areas, in 20 states and the District of Columbia. Later, the dealers and the Justice Dept. agreed to limit the investigation to eight companies. Of these eight, four or five may be haled before grand juries.

Three basic charges are being considered, involving both the Sherman and Clayton antitrust laws. The prime allegation will be that the companies violated the Sherman Act's price-fixing prohibition. The same act probably also will be cited in charges that the companies tended to monopolize the market.

•

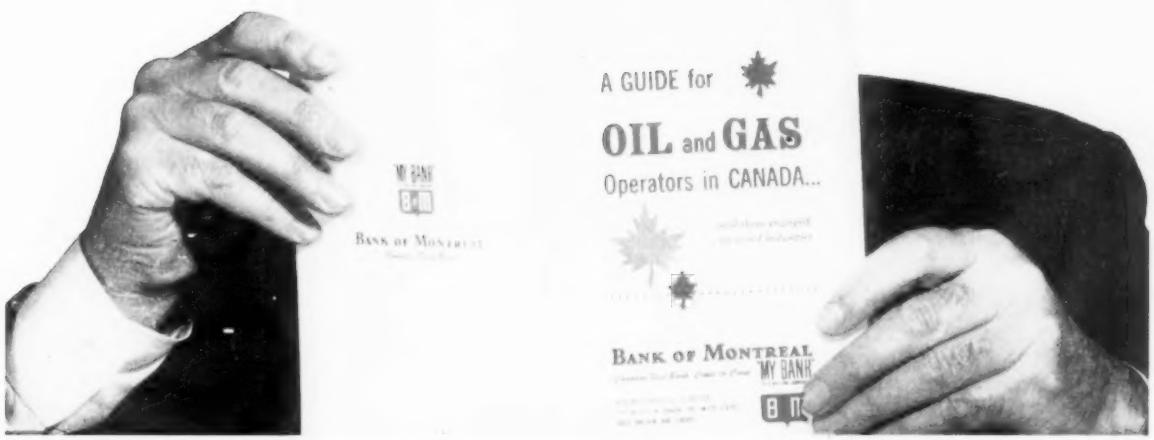
The companies under investigation include some of the largest gasoline supplier-marketers. Both the East and West Coasts are involved, and a number of inland states as well.

The government probably will seek separate action against each company—not a wholesale move such as the Alexandria (Va.) federal grand jury took against 29 companies in 1958. If the price-fixing charge alone is attempted, each potential case might be limited to a single city.

Don't be misled if cases are started periodically and appear to be just local situations. They will still be directly traceable to the organized complaints of the dealers, and will constitute a major attack on company marketing operations. Besides, the Justice Dept.'s investigation is being watched closely by Rep. Roosevelt, chairman of the House Small Business Subcommittee on Marketing, and the California lawmaker is looking for evidence to support marketing legislation he has in mind.

•

Meanwhile, the government's other antitrust agency—the Federal Trade Commission—is in for a change of faces. Chairman John W. Gwynne is expected to resign soon. Speculation centers around Commissioner Edward T. Tait as the new chairman. In that case, FTC General Counsel Earl W. Kintner could be the new member.



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The trucks were then tested—by America's leading independent automotive testing firm—at constant speeds of 30, 45 and 60 miles an hour. Next came stop-and-go tests, ranging from moderate city traffic to normal retail delivery operation. Acceleration rates were carefully timed in each gear to insure accurate results for all makes.

HOW NEW '59 SIXES RATE IN GAS MILEAGE

'59 FORD SIXES GIVE	25.2% more miles per gallon than Make "C"	31.1% more miles per gallon than Make "I"	9.6% more miles per gallon than Make "G"	42.6% more miles per gallon than Make "D"	22.0% more miles per gallon than Make "S"	25.2% more miles per gallon than the average of all makes

The '59 Ford Sixes, *in every test*, averaged more miles per gallon than every other make! Combining all tests, the '59 Fords led the average of all other '59 pickups by 25.2%.

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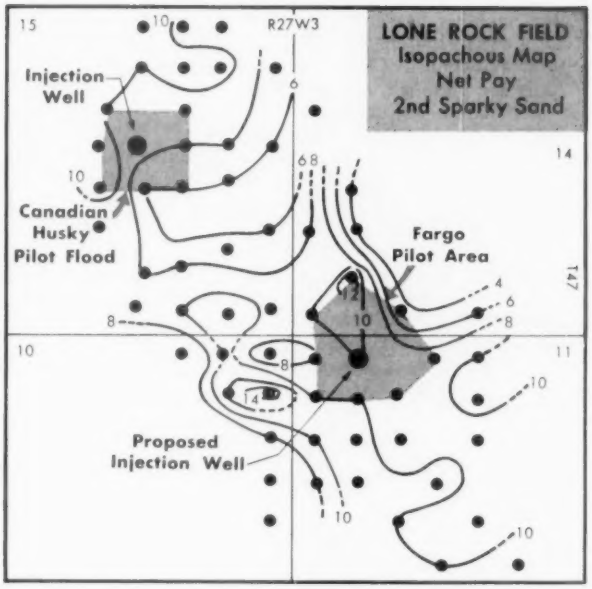

PILOT WATERFLOODS by three companies, one in Coleville field and two at Lone Rock, are the first in which . . .

Heavy Crude Is Flooded in Canada

Three significant pilot waterfloods in western Saskatchewan may result in sweeping changes in the outlook for production of heavy oil in Canada.

One of the projects is well under way; another is still in its early stages; the third is just about ready to begin.

All of the programs are aimed at increasing either productivity or ultimate recovery, or both. Recovery by primary means of the low-gravity (13-17), highly-viscous crude in the flood areas is usually estimated at from 4% to 5% of the oil in place.

Total remaining reserves of black oil in Western Canada as of Jan. 1, 1959, that are recoverable by primary means alone, are estimated roughly in the neighborhood of 26-million bbl.

According to rough estimates, about 40-million bbl. of black oil have been produced so far. The remaining oil in place may amount to as much as 1-billion bbl.

The Lone Rock pool of the Lloydminster area is the site for two of the projects, one by Canadian Husky Oil, Ltd., the other by Fargo Oils, Ltd. The third flood, by Royalite Oil Co., Ltd., is under way in Coleville field, about 100 mi. south of Lone Rock.

Canadian Husky's waterflood project at Lone Rock is in advanced stages.

The other Lone Rock project, planned by Fargo, is expected to start within a matter of weeks.

Royalite's Coleville project is winding up its third month.

In addition to possible field-wide application in both fields, success of the three pilot waterflood projects might logically pave the way for similar programs in other black oil regions.

This already seems to be the thinking of Canadian Husky in regard to its own holdings. The company is the major operator in the Lloydminster heavy oil area, which consists of 26 separate pools on both sides of the Alberta-Saskatchewan border (PW—Apr.3'59,p29).

Says Husky's R. W. A. Laidlaw: "From this pilot, we hope to ascertain the physical and economic feasibility of its application to entire fields, as well as application to new fields in the early stages of primary production.

"This pilot flood, by its proofs to date, opens the door wider to consideration of flooding and pressure maintenance in the newer, nondepleted [heavy oil] fields and pools."

In addition to Lloydminster, the main black-oil producing regions are Wainwright and Coleville. Other, lesser black-oil fields include Chauvin, Taber, Conrad, and Bonnyville.

Canadian Husky's pilot project in Lone Rock field, Canada's pioneer effort to flood heavy crude, was started in November, 1956. Before the waterflood was started, the seven producing wells in the project area were in the depleted stage and subject to abandonment.

The seven wells together were producing an average of 22 b/d.

By the end of February, 1959, total average production had increased to 78.5 b/d—a 257% increase.

From November, 1956, through February, 1959, a total of 284,000 bbl. of water were injected, an estimated 130,000 bbl. of gross fluid withdrawn, and 48,600 bbl. of oil recovered.

The pilot area, in section 15-47-27w3, contains 345 acre-ft. of reservoir volume. The 2nd Sparky sand is found at 1,867-80 ft.; porosity is from 25% to 30%, and permeability averages from 1,500 to 3,000 millidarcies.

The seven producing wells and single injection well are on 10-acre spacing.

The Canadian Husky project has provided some important answers so far. But total effectiveness has not yet been determined.

It hasn't been necessary to install a pump at the injection well, since injection has been by gravity throughout.

An injectivity rate to fill-up was established at 200-250 b/d, and an average input of 230 b/d was maintained for the first six months of op-

eration. Input rate was gradually raised to a high of 516 b/d in December, 1958.

Movement of heavy oil by the injected water has been established within the confines of the pool.

Early breakthrough, a constant fear in waterflooding, did not occur.

In order to identify injection water at time of breakthrough, a strong fluorescein dye is being used. No trace of dye has been noted in the recovered water to date.

Canadian Husky won't make any decision regarding expansion of the project, however, until more conclusive results have been obtained.

Should any effort be made to apply the flood field-wide, a unit agreement would be necessary. There are about 150 wells capable of producing at Lone Rock.

Fargo Oil's planned waterflood in Lone Rock field is based on studies made of Canadian Husky's pilot project, 4 mi. northwest.

Structurally, there is no major difference between the two areas. The Fargo pilot area, in sections 11 and 14, township 47, range 27, contains 584 acre-ft. of 2nd Sparky pay, yielding 17-gravity crude. Fargo will use eight producing wells, also on 10-acre spacing.

An engineering study by James A. Lewis Engineering, Ltd., says that the recovery potential of a waterflood program in the selected area "appears favorable, in that an additional 58,020 bbl. of oil will be produced by means of water injection over a three-year period after July 1, 1959."

The report adds that total oil production to July 1, 1959, will amount to 449,180 bbl. by primary methods, and that continued production will then be uneconomic unless the secondary recovery scheme is initiated.

Despite its known limitations, an inverted-type flood, on the order of the Canadian Husky pattern, will be used by Fargo in its pilot area.

Lewis's engineering study notes that "the areal sweep efficiency of this inverted-type pilot flood is known to be lower than that of a conventionally-enclosed pattern."

The recovery, therefore, as indicated by the data obtained from Canadian Husky's pilot flood, is not the maximum that might be obtained from the area by waterflooding, according to the report.

Engineering calculations indicate that the oil production rate from the eight wells will increase to a maximum of about 3,400 bbl. per month by mid-1961, and then decline to the economic limit of 5 b/d per well by Mar. 1, 1962.

During this time oil production resulting from water injection will amount to 58,020 bbl. This figure should be considered the minimum, the report continues, since it reflects only the recovery from the wells offsetting the injection well.

Water from Fargo's cleaning plant will be used. This also is Canadian Husky's source. This water is produced initially from shallow sands as fresh water, which is used in the plant to desalt the crude.

Royalite's waterflood of a pilot area in Coleville field has been under way only since Jan. 17, 1959. So it's still too early to draw any conclusions.

The Royalite flood includes four producing wells and one injection well, in lsd 11-30-31-23w3, on a five-spot pattern. Four additional offset wells also will be observed.

All wells in the field produce from the Coleville sand, at about 2,700-60 ft. Average sand thickness is about 50 ft. The pilot area comprises 100 acres, including the indirect offsets. The wells are on 20-acre spacing.

Producing limits of the field were fairly well determined by early 1957. There are 287 wells capable of producing.

Calculations indicate that the fill-up of the reservoir between the injection well and the offset producers will be in the neighborhood of 133,000 bbl. It's estimated that 210 days will be required for fill-up.

As of mid-March, the company had injected a total of 2,651 bbl. of water, with injection pressure of about 465 psi., according to Hjalmar B. Holmberg, chief production engineer.

Crude in this reservoir is 13.1-gravity. The Coleville sand in the central part of the field has an average porosity of 28.7%, and a permeability of about 1,000 millidarcies.

The water-oil contact in the reservoir isn't clearly defined, because of the heavy, viscous nature of the crude. Most evidence available indicates a water-oil contact at about 430 ft. subsea, and only on the south and southwest flanks of the field.

Royalite doesn't, however, consider waterflooding to be the "ultimate" means of effecting maximum recovery from the Coleville sand reservoir. The company says it also is considering use of thermal recovery.

The company, when submitting the project to the provincial government, said that waterflooding should result in "some" increase in recovery over primary methods. For this reason, it continued, a pilot test was recommended.

The company added, however: "Information available on the in-situ combustion process indicates that waterflooding of the reservoir does not preclude the future application of this process to a reservoir.

"If feasible, waterflooding appears to be an interim step for increasing recovery over a period during which the in-situ combustion process might be developed further."

The company noted, however, that the in-situ combustion process, "as developed to date, is very expensive." It added: "Preliminary investigation as to its application in the Coleville sand reservoir indicates that such a process at this time would be uneconomic.

"However, waterflooding of the reservoir in no way precludes the future application of the in-situ combustion process if it becomes economically feasible."

Bees Keep Lease Operator on the Run

This Shell Oil Co. lease operator makes his periodic checks on this gas well in Oblate field, Hildalgo County, Tex., a bit more rapidly than is the custom. The property owner moved the bee colony in after the well was completed, but before it was connected to a pipeline. The bees, which apparently enjoyed their solitude during this period, now take a dim view of any visitors.

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Here is without question a new, revolutionary in design, plug valve. Designed for high pressure services, this valve can't stick or freeze. It can be overhauled to like-new condition in the line. It requires no adjustments, no special tools for operation or maintenance. It is considerably lighter in weight, yet actually stronger than heavier units. It can be operated easily under pressure. And it costs considerably less than present valves now being used in high pressure service. Get the details on this new Hamer Valve from your local Hamer representative or write to the factory for detailed literature.

NO ADJUSTMENTS REQUIRED

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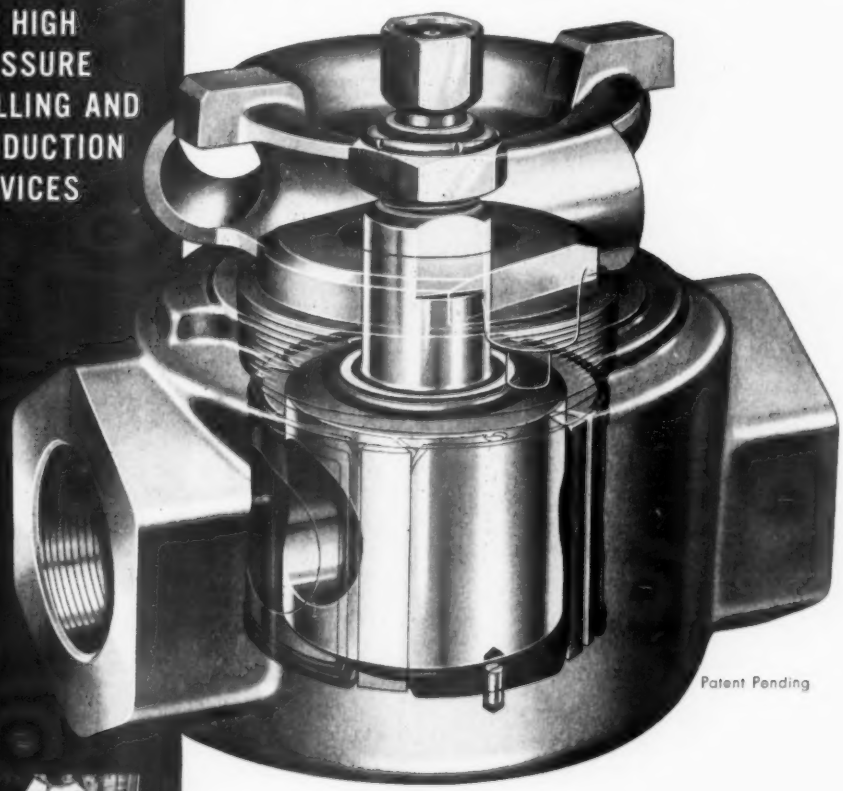
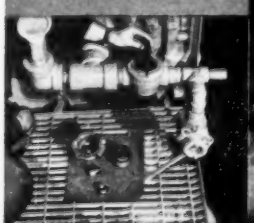
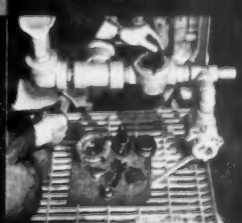


Patent Pending

READILY OVERHAULED IN LINE



1 Valve can be disassembled in the line using conventional hand tools.



2 Replacement kit permits reconditioning valve to like new effectiveness in less than 10 minutes.

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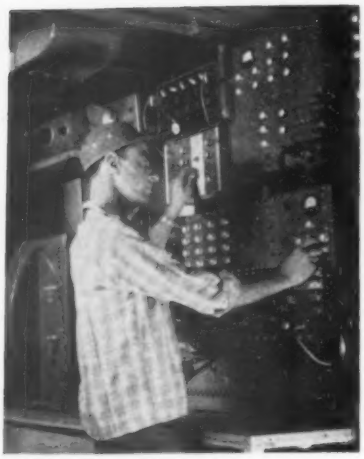
ON THE SONIC, a one-ship seismic operation now working in the Persian Gulf, the common problem of water reverberations masking the valid reflections is being solved.



AIR-conditioned room houses instruments used to record seismic reflections.

Licked: 'Singing' Seismic Records

The problem of "singing" records, caused by water reverberations in offshore seismic shooting, reportedly is being solved in the Sonic, an exploratory ship operated by Geophysical Service Inc.

The Sonic presently is conducting seismic operations in the Persian Gulf.

According to GSI, the solution to the singing records is revealing information that has up to now been masked by the ringing sound.

Singing records are common occurrences in the Persian Gulf and Lake Maracaibo, and to a lesser extent in many other marine areas where the lake or ocean floor is relatively flat and is formed of a strong reflective layer.

In these cases, an energy trap is formed by the water bottom and the air-water interface.

When a shot is fired in the water, it is successively reflected between the two interfaces in such a manner as to mask and distort reflections from the deep structures.

The GSI method uses seismic data processing for the first time as a tool to provide geophysical information which had been impossible to obtain.

GSI says this new use for data processing has established it as a type of exploration tool for supplying information in compact form for quick evaluation.

GSI treats the singing as linear filtering of the valid signal rather than as added noise.

The company has developed this use of data processing into a production technique, which is handled in its London and Dallas data-processing offices. The success of the method depends upon a special high-fidelity recording technique now in use in all of the company's marine seismic operations.

GSI feels that this application of data processing may lead to other uses of electronic computers in seismic work to solve similar problems.

GSI says, however, that such applications undoubtedly will not be uniformly successful. It cites the fact that the effectiveness of such a technique as multiple seismometer arrays with multiple holes, to increase the signal-to-noise ratio in land operations, varies depending on local conditions.

Tests of the system made aboard the Sonic have been highly successful, says GSI.

The Sonic itself is unique, in that it is a one-ship operation, with no helping or sister ships.

The ship is a 158-ft., 405-ton former Navy LCS-L. It carries an automatic pilot, a recording fathometer, a ship-to-shore radio, radar, and a power launch.

Its crew members double as sailors and geophysicists.

All seismic work is conducted aboard the Sonic. This one-ship operation is said to be more efficient than multiboat operations.

Charles M. Moore, Jr., vice-president in charge of operations, Eastern Hemisphere, for GSI, says the ship can run about 50 mi. of line in one day.

Instrumentation includes a 24-channel system of Series 700 amplifiers, a magnetic recording system, and the latest type of pressure seismometers. These seismometers differ from the conventional types in that they are piezo-electric crystal detectors. The detectors are encased in a cable.

This forms the seismometer streamer that trails out about 2,700 ft. behind the ship during shooting.

Floating firing lines, carried on power driven reels at each side of the ship's afterdeck, are paid out alongside the streamer.

A charge, attached to the firing line with a metal ring, is dropped over the side at regular intervals, and is fired automatically when it is in position opposite the seismometer streamer.

Time intervals between shots match the distance intervals covered by the cable, resulting in a continuous, interlocking profile.

A charge goes off about every two minutes some 1,500 ft. behind the ship, kicking up a column of water about 200 ft. high.

The ship carries about 100,000 lb. of explosives, which is sufficient for 30 to 45 operational days. If more explosives are needed, a barge is rented and anchored in a place agreeable to local authorities.

Only minor differences exist in instrument operations between the marine and regular land work.

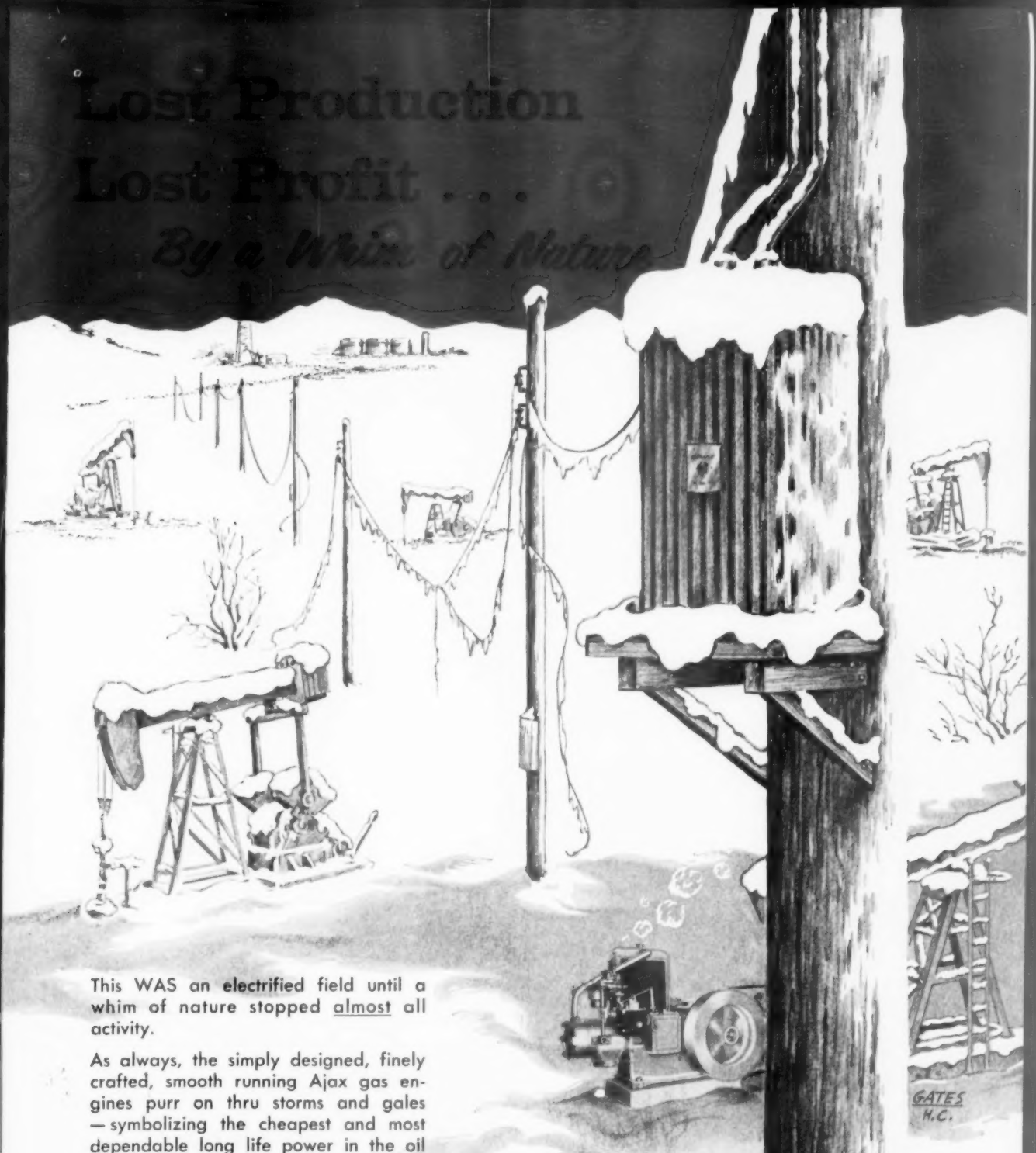
One difference: The marine amplifiers are in continual operation. Thus, they must be mounted in an air-conditioned recording room to keep them from burning out.

Special blowers mounted on the instruments also help keep them cool.

Records are passed to a small darkroom for developing, rather than being developed in the camera by the observer.

Locations are usually made with the Decca navigation system.

Lost Production
Lost Profit . . .
By a Whim of Nature



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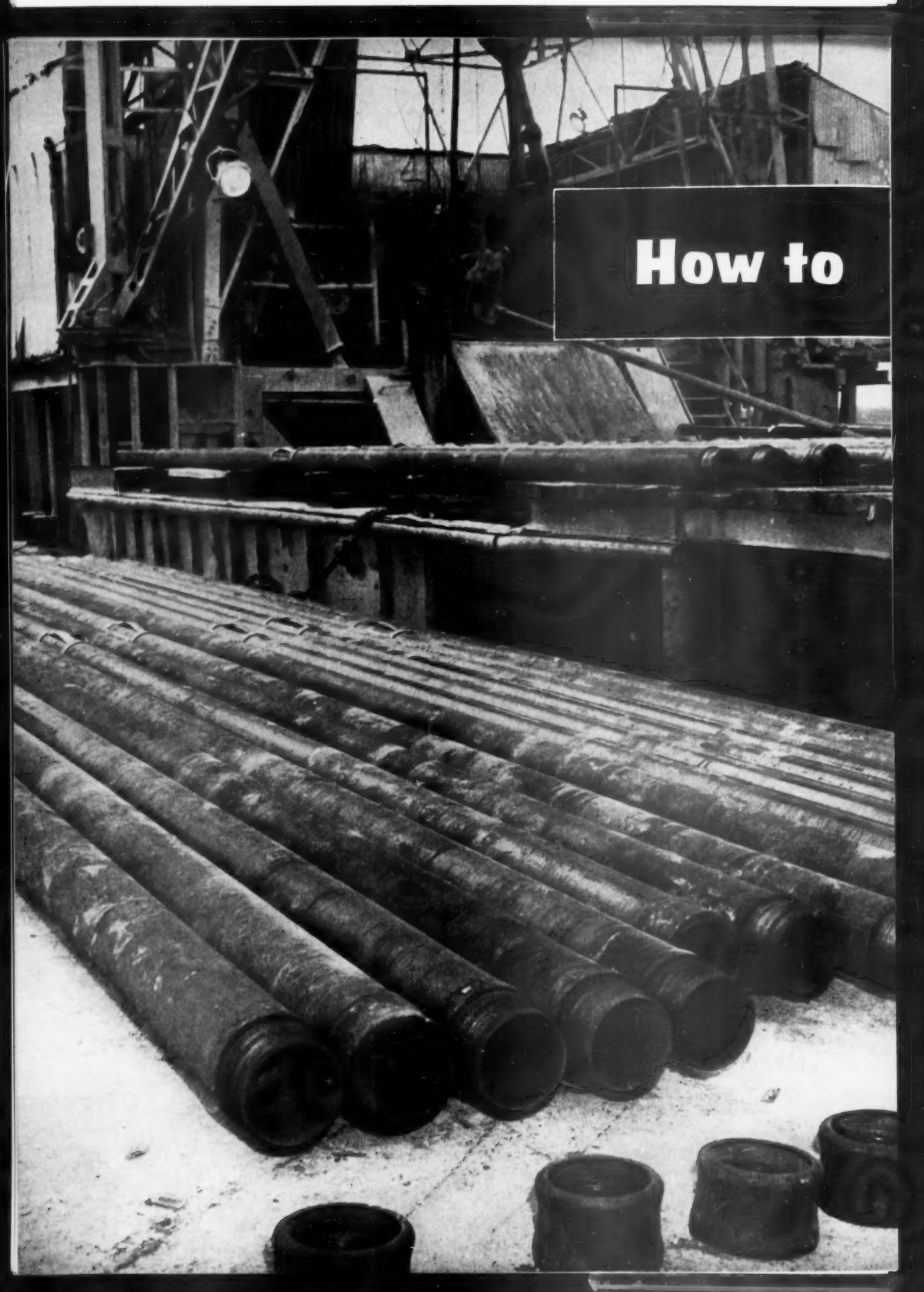
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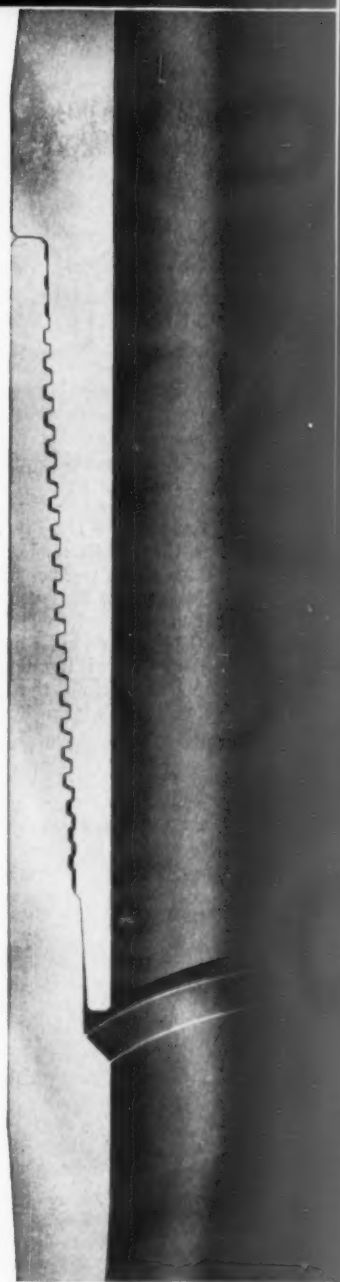
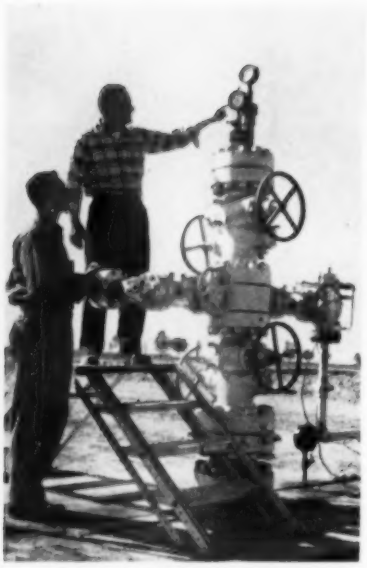
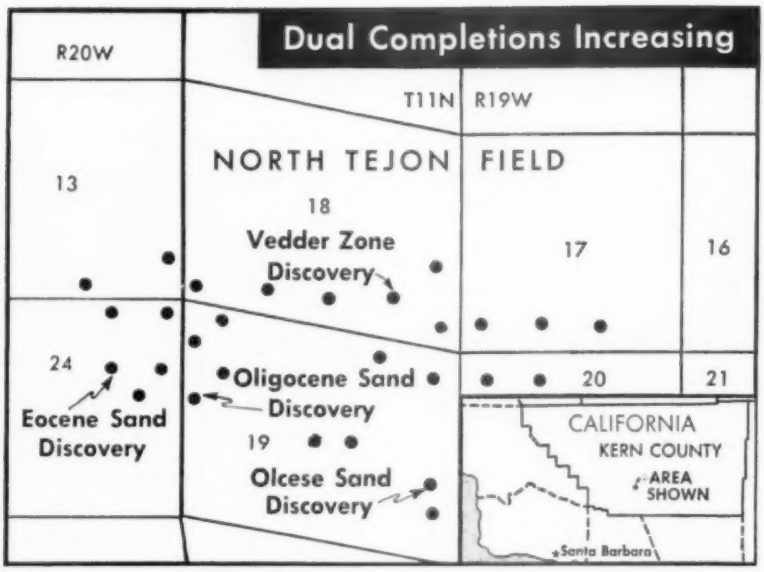


Extreme Line Joint





FIRST DUAL COMPLETION (left) in North Tejon field is checked by J. B. Vallely (left) and W. W. Lewis, of Reserve Oil, as . . .

Multiple Pays Keep North Tejon Busy

Besides opening a new pay, the latest completion in California's active North Tejon field also underscores a field trend to dual-string completions—virtually unknown in the state only six months ago.

Reserve Oil & Gas Co.'s No. 304-19 W-T, section 19-11n-19w, Kern County, is the eighth dual-string completion out of ten wells completed in the past six months at North Tejon.

Reserve started the trend in October, 1958, by completing No. 302-19 W-T as one of the first dual-string completions—if not the first—in California. The company has since made three other such dual-string completions in the field, and Richfield Oil Corp. (L.A.) has made four.

Reserve's latest completion was of an 11,768-ft. hole that found pay in Vedder, Oligocene, and Eocene sands. There is 252 ft. of over-all pay in the upper zone (Vedder sand), at 8,834-40 ft., 8,856-68 ft., and 8,876-9,110 ft. The lower zone takes in 205 ft. of Oligocene sand at 10,960-11,165 ft. and 386 ft. of Eocene sand at 11,242-628 ft. Production from the latter two zones is commingled.

The first string of tubing was landed at 11,189 ft. through a packer at 9,120 ft., while the second string was hung in a packer at 8,592 ft.

Initial production from the upper zone was at the rate of 953 b/d of 34.6-gravity oil through 20/64-in. choke. The lower zone tested 4-million to 4.5-million cf/d of gas and 250 b/d of 55-gravity condensate through 21/64-in. choke.

The well was shut in pending installation of high-pressure handling facilities and a larger line by the gas purchaser.

Completion from the Oligocene proved up a new productive pool at North Tejon. The well also is the second in the field to tap pay in the Eocene, which was proved productive initially by a Richfield well ½ mi. west.

The rash of dual-string completions at North Tejon results from discovery of multiple pays in the two-year-old field.

The principal pay is the Vedder sand, which has been found productive in seven different sand subdivisions. Twenty wells out of 22 in the field produce from Vedder sands. Top of the Vedder sand is found at 8,700 ft. in the highway area, in the west portion of the field, and at 12,000 ft. in the main area, in the east portion of the field.

Present indications are that production will be continuous between the two areas, with an oil column in the field in excess of 3,300 ft. Average thickness of the pay sand is between 400 and 500 ft.

Depending on structural position and permeability, a given well may produce from one to as many as seven identifiable zones in the Vedder section.

Average per-well production is about 450 b/d of approximately 35-gravity oil, and 600,000 cf/d of gas, flowing through a restricted choke.

On the average, each well takes about 110 days to drill and complete, and costs about $335,000.

Cost of a dual completion adds about $20,000 to the cost of a single zone completion.

About ½ mi. south of the Vedder production, the Olcese sand is productive in an interval approximately 150 ft. thick, at 7,400 ft. Two wells have been completed in this pool.

Reserve's newly-completed well is the only producer in the Oligocene sand, and shares Eocene production honors with a dually completed Richfield well that is producing from the Eocene at 10,914-11,331 ft., and from the Vedder zone in a shallower interval.

There are two methods of dually completing wells at North Tejon. The primary difference lies in the way circulation is established to remove mud prior to completion.

Reserve runs the long string of tubing through a dual-string production packer above the upper zone, and on down through a retainer production packer below the bottom of the upper zone.

A sealing nipple seats the string in the retainer, while weight on it sets the dual string packer above.

A short string of tubing is then run into the hole, stabbed through a hole in the dual-string packer, and seated by means of a seating nipple on the bottom of the string.

After both strings of tubing are landed on the surface, the Christmas

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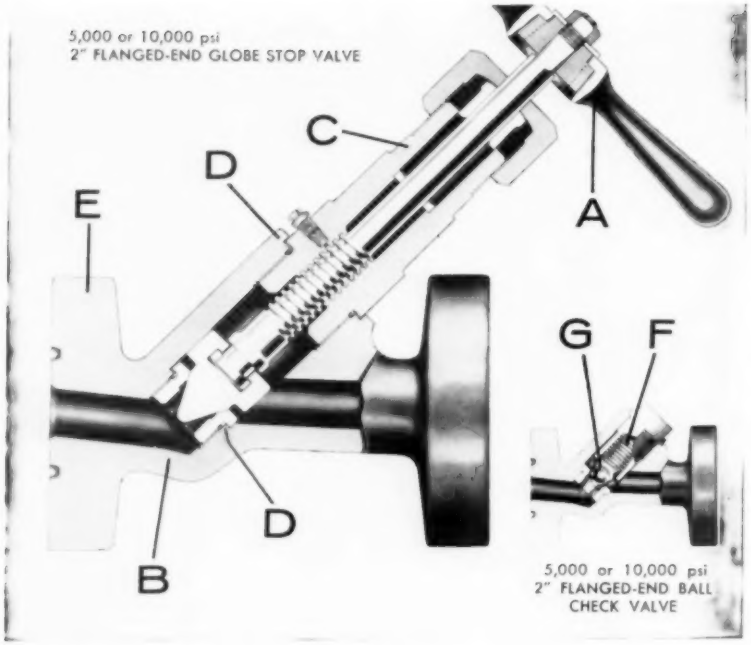

New Edward High-pressure Valves for Petroleum Services

New high-pressure, *flanged-end* valves from Edward are designed to give you longer, more dependable service for many petroleum industry applications requiring highest quality in forged steel valves: high pressure heaters, treaters and separators, high-pressure vessel blow-down; headers and flow lines; bypass lines; unloading in compressor stations; blow-out preventer manifolds; throttling services; and many other similar petroleum industry applications.

NEW GLOBE STOP VALVES—There are two new Edward flanged-end, globe stop valves: one for pressures to 5,000 lb WOG at 300F (10,000 psi test); and one for pressure to 10,000 lb WOG at 300F (15,000 psi test). Both valves have the exclusive cross-arm style Impactor handle* (A) that makes closing against high pressure much easier, eliminates need for "cheaters." Valve body (B) is drop forged of chromium-molybdenum alloy steel to exacting requirements for maximum ruggedness and long life under toughest service conditions. The inclined bonnet (C) facilitates streamlining of flow passages, reduces pressure drop and wear-producing turbulence. Metal gaskets (D) and buna-N "O" rings assure tight, leak-proof fit between body and bonnet and between seat and body. Flanges (E) are forged integral with body and faced according to A.P.I. Standard 6B.

New globe stop valve Figs. 5158 and 9158

New ball check valve Figs. 5160 and 9160

NEW BALL CHECK VALVES—In the same pressure classes as the new stop valves, are two new forged-steel, ball check valves. These new check valves have the same general construction plus stainless steel spring (F) and 16% chromium stainless steel ball disk (G) for tight seating. Seat and ball disk are replaceable.

To get the complete story, plus ratings and dimensions, on new Edward flanged-end valves, write for Bulletin 584. Edward builds a complete line of cast and forged steel valves for pressures to 10,000 lbs, with flanged, screwed, socket, or butt welding ends. For additional information, see your favorite distributor, or write Edward Valves, Inc., 1236 West 145th Street, East Chicago, Indiana. Subsidiary of Rockwell Manufacturing Company. *T.M. Reg. U.S. Pat. Off.

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tree is lifted, picking up both strings of tubing in the process and unseating the dual-string packer and retainer, thus making it possible to circulate down the annulus and back up the tubing to get mud out of the hole.

Richfield, on the other hand, runs the upper packer in with the long tubing string, which seals off in the lower permanent packer set below the upper sand.

The upper packer is set with the second tubing string.

Just above the permanent packer, a side door choke is set on the long string, for use in circulating, and also for possible future use in production. A sleeve valve on the short tubing string is set above the upper packer for circulating purposes only.

The gas-condensate production necessitates use of an automatic shut-off on that side of the dual-string Christmas trees.

The automatic shut-off is activated by maximum and minimum pressures on the downstream side of the device —used by Reserve—and provides a safeguard in case the high-pressure flow line is broken.

Without such a shut-off, in the event the line broke between the header and the choke (which is 100 to 150 ft. from the well, since it has to be immersed in a hot-water bath to prevent freezing), the zone would blow out wide open through the tubing.

Special collars are used on the tubing so that the two production strings will fit inside 7-in. casing.

Both Reserve and Richfield use 2⅜-in. upset tubing, employing thinner collars made of higher grade steel.

For example, N-80 collars are used with J-55 tubing and P-105 collars with N-80 tubing.

In addition to its role as a proving ground for dual-string completions in California, North Tejon field holds the distinction of being the busiest field in the state.

Twelve rigs currently are working in the field: six for Reserve, three for Richfield, two for Standard Oil Co. of California, and one for The Texas Co.

North Tejon's boxscore since its discovery tends to confirm the original belief the field would prove significant.

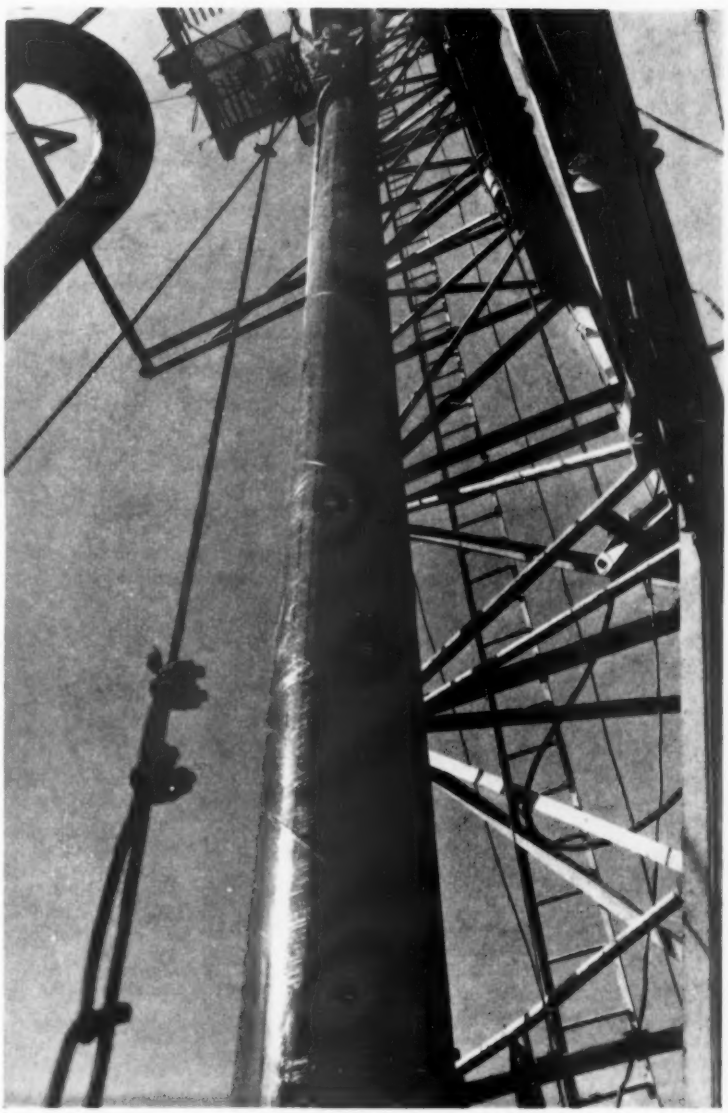
Since the initial discovery by Reserve in March, 1957, 22 wells have been completed—eight by Richfield, and the remainder by Reserve.

Present production from the field approximates 6,000 b/d.

Only one dry hole has been drilled to date—a Richfield effort on the west edge of the highway area of the field.

Armco Casing Cuts Costs 3 Ways

Engineers and drilling contractors have found that Armco Slip-Joint Casing gives them definite advantages and economies. Here are three reasons why Armco Casing means lower costs, greater efficiency, and faster running.



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Just stab one end of a 40- or 50-foot joint into the Armco Slip-Joint Collar, make a fast weld, and lower away. The downhand fillet weld required is the fastest and easiest to make. Field welding costs stay down.

CASING COSTS LOW

The uniformly high collapse resistance of Armco Casing lets operators safely set lighter, lower cost strings to greater depths. Carefully conducted tests show that the variation in collapse pressure for Armco Casing is less than for other types of casing.

LESS RUNNING TIME

Fewer joints in the string mean faster running, lower costs. Armco Casing is supplied in exact 40- or 50-foot lengths instead of the usual random or double-random lengths. Uniform lengths help you quickly determine the footage in the hole or in the stockpile at any time.

Armco Casing is distributed by National Tank Company, Tulsa, Oklahoma, and National Tank Company, Ltd., Edmonton, Alberta, from 21 stocking points throughout the oil country. Sizes range from 6 to 24 inches. When you have a rush job, a call to the nearest stock point listed below will start the casing on the way. Write to us for more data. Armco Drainage & Metal Products, Inc., 5169 Curtis Street, Middletown, Ohio.

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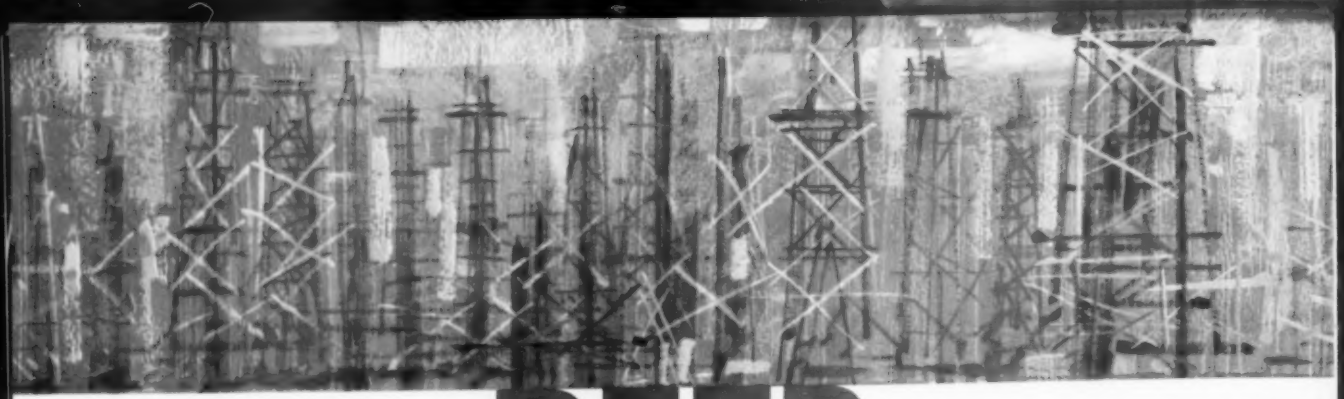

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1958 ... The first combination teeth-and-insert bit – the Reed COMET

1957 ... YC-3 Air Bits, specially designed insert-type rock bits, set tremendous footage records in air drilling

1954 ... Jet Y Bits with exclusive Flush-Flo return ports greatly increased return area, improving cleaning and hydraulics

1953 ... Reed pioneered the "tensile-impact" test for flash welds; there has never been a field failure in the weld area of a Reed Flash Welded tool joint

1950 ... Twin-Blast series rock bits brought further improvement in bottom-hole cleaning action

1948 ... Reed developed the W. O. tool joint for use on light weight pipe

1948 ... Reed originated the "Hi-Flex" operation to extend fatigue life of drill collar connections

1948 ... Liquid-Blast series rock bits improved cleaning action on cutters and on bottom of hole

1947 ... Reed introduced the "Super" type drill collar with field-replaceable connector

1939 ... Reed introduced the tool joint with cylindrical land and fixed landing shoulder for foolproof application and removal in the field – the Super Shrink-Grip tool joint

1939 ... Reed pioneered the Semi-Internal Flush tool joint, later to be called the Extra Hole tool joint

1937 ... Reed developed the Double Streamline tool joint; the 4½" size was later adopted as the API standard 4" Full Hole tool joint

1936 ... Reed pioneered the Internal Flush tool joint which was to become API standard

1935 ... Reed engineered and designed the tool joint which substantially eliminated last engaged thread failures – the Shrink-Grip tool joint

1934 ... The first cross cutter rock bit with ball thrust bearings

1930 ... The first unitized rock bit

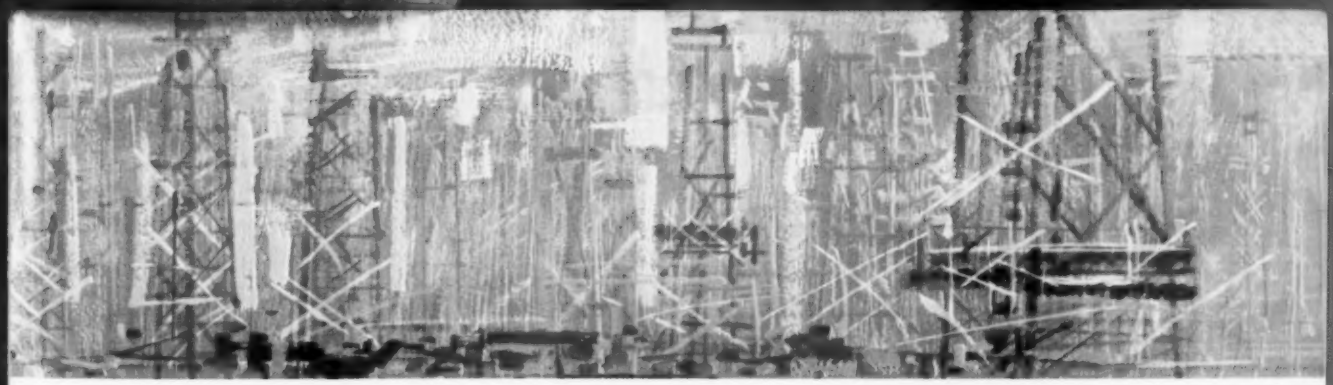
1930 ... The first bridge-type rock bit having replaceable watercourses to provide jet action on cutters and on bottom of hole

1929 ... The first rock bit with slush lubricated roller bearings

1928 ... The first bridge-type rock bit

1927 ... First field use of hard metal applied to cutter gage faces

1926 ... Reed introduced a rock bit with longer teeth and improved slush lubricated rolling cutters, greatly increasing footage per bit



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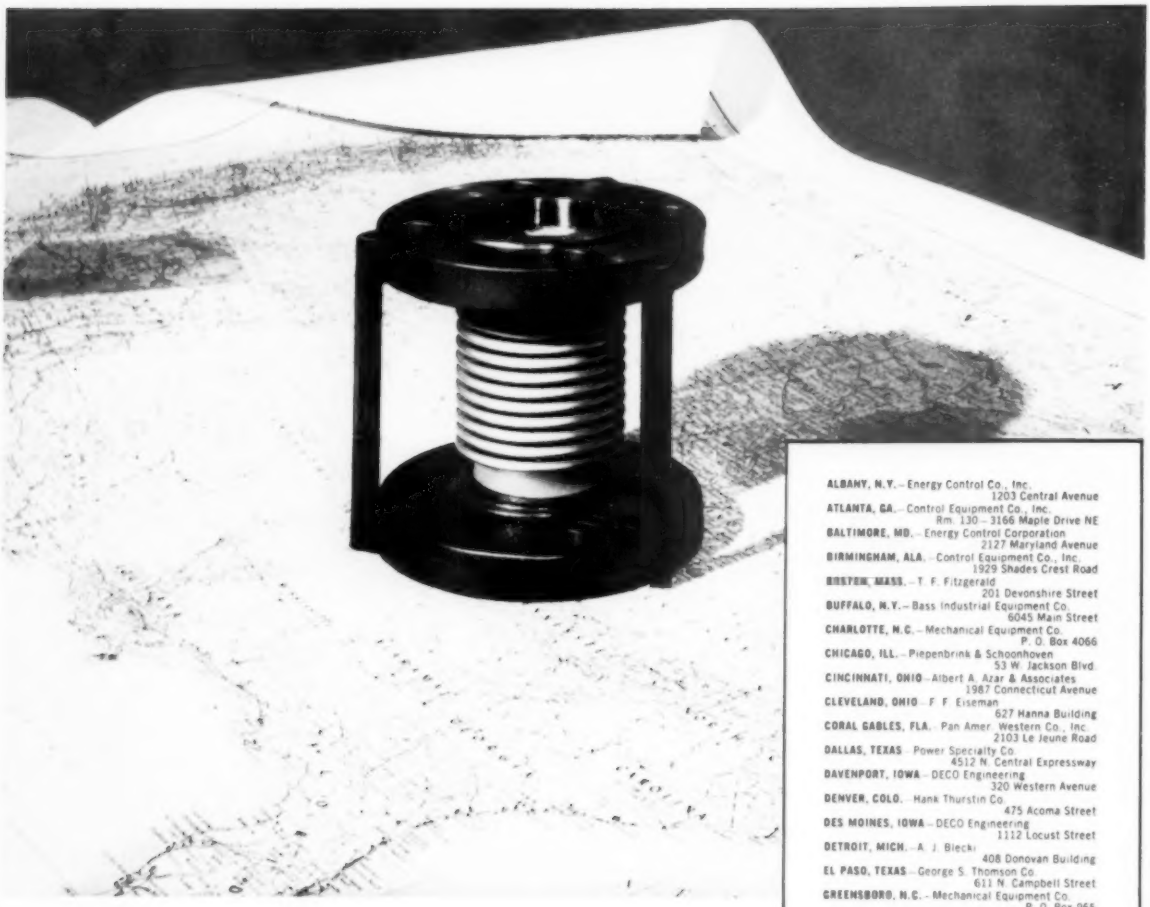

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What's New / IN EXPLORATION, DRILLING, PRODUCTION

Says Nuclear Blast May Yield Low Cost Oil

A West Coast scientist says the underground nuclear blast proposed for Alberta's tar-sands region may result in production of low-viscosity oil for as little as $1 per bbl.

Gerald W. Johnson, test director of the University of California Radiation Laboratory, gave the low figure in a talk to the Assn. of Professional Engineers, in Calgary.

The Athabasca tar-sands project has been proposed by Richfield Oil Corp. (L.A.). The nuclear device would be obtained from the U.S., and the Atomic Energy Commission would have a voice in the execution of the project.

Approval by both the U.S. and Canadian governments is necessary.

"We will be ready to go ahead six to eight months after the joint government approval is obtained," Johnson said.

•

Halbouty: Alaska To Boom

"Give us two new fields, anywhere, and Alaska will be on the way," says Michel T. Halbouty, Houston independent.

Addressing a conference of Canadian and U.S. petroleum and mining engineers in Anchorage Apr. 4, Halbouty added:

"I think the success of Alaska as an oil province has already been made. Now it's just a question of time."

He expressed the hope that independents would start moving into Alaska "in great numbers." "The majors are necessary," he said, "but if this great potential development is to ever generate the speed it needs, there will have to be more independents."

Halbouty Alaska Oil Co. is currently drilling on the Kenai Peninsula, near the Swanson River Unit. As of last week, the hole was being drilled below 10,500 ft.

•

Royalty Hopes Fade

More than 5,000 residents of Bakersfield, Calif., have learned—unhappily—that wildcatting for oil can be a tough proposition.

The Kern County residents were the lessors who two years ago signed the approximately 5,200 individual leases that went to make up Union Oil Co. of California's 2,500-acre townlot block in Bakersfield.

The company had its sights trained on a hoped-for Stevens sand accumulation similar to that discovered in 1956 near Arvin, 10 mi. southeast of Bakersfield.

Last week, Union quitclaimed the big townlot block. The action came after it had drilled four dry holes in the block.

•

Leasing News

Spirited bidding sparked the Texas state school land sale last week.

W. S. Kilroy, Houston, offered 91% royalty for lease of 65 acres in Palacios gas field, Matagorda County.

The offer included $100 per acre bonus, required on all bids.

Phillips Petroleum Co., with a 75% royalty offer, was high bidder for 13 acres in Hitchcock oil and gas field, Highland Bayou, Galveston County.

Bonus bids for 14,400 acres of state-owned lands, mostly in submerged areas along the coast, totaled more than $574,000. Skelly Oil bid $52,467 for 640 acres in Galveston Bay, Chambers County.

Acreage in North Dakota's McKenzie County drew highest bids at the April sale of leases on school lands.

Land leased at the sale totaled 31,331 acres, and brought a total bonus offering of $101,694.

Bonuses totaling $61,181 were received by Colorado for 19,949 acres of state lands at the April sale.

Highest bonus bids were from Pan American Petroleum Corp. for Pueblo County tracts 160 through 166. The Pan Am bids ranged from $11.59 to $16.69 per acre. Other bidders in-

New Barge Headed for Louisiana Offshore

Following testing this week in the Gulf of Mexico south of Galveston, Tex., this new Union Producing Co. drilling barge will begin development drilling on a Union lease in Eugene Island Block 116, off St. Mary's Parish, La. The barge, built by Todd Shipyards Corp., is designed to operate in waters to 70 ft. deep. It is equipped to drill below 20,000 ft. The four large caissons, 24 ft. in diameter, were designed to add stability while the barge is being raised or lowered. The deck is 80 ft. above the hull, which measures 190 x 160 ft.

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cluded Skelly Oil Co., Pure Oil Co., Carter Oil Co., and Anderson-Prichard Oil Corp.

•

The Texas Co. has followed other major oil companies in fighting Colorado's gross income tax on oil and gas production.

A suit filed in Denver District Court asks the court to declare the tax unconstitutional and to refund Texaco $257,936, which the firm paid on its gross income of $7,350,257 on Colorado production during 1953, when the tax was adopted.

Since that initial payment, Texaco and other companies have been paying the tax under protest, subject to a refund if the tax is declared unconstitutional.

Original suit by The California Co. is now before the Colorado Supreme Court on appeal from a lower court ruling in favor of the tax.

•

Cornell Oil Co. is seeking Texas Railroad Commission approval for a secondary recovery program in Wasson field, Yoakum County.

The company wants authority to conduct gas-injection pressure maintenance on its three Whittenburg leases in the field. The leases cover about 2,000 acres.

Plans call for one injection well in each section. Between 800,000 cf/d and 2.5-million cf/d of gas would be injected under the program.

•

Christie, Mitchell & Mitchell, Houston, plans to drill 60 wells in Wise County, West Texas, this year.

John Mitchell, president of the firm, last week said the partnership and its associates have budgeted more than $4-million for the drilling program.

•

Drilling Highlights

North Texas—Shell Oil Co. No. 1 C. C. Conley, section 81, block H, W&NW survey, Hardeman County, was completed for 226 b/d of 48-gravity oil through 1/21-in. choke and open-hole section at 7,800-8,008 ft. in the Chappell (Mississippian). The discovery is 8 mi. southeast of the 1-well Quanah Granite Wash pool and 7 mi. southwest of the 1-well Chillicothe Strawn pool, the only two other producers in the county. Nearest Mississippian production is 15 mi. northeast, in Odell field, Wilbarger County.

West Texas—W. B. Yarborough, L. E. Windham, and Ormand Bros. Drilling Co. No. 1-A C. S. Davis, section 12, block L, GWT&P survey, was completed as a Permian discovery, Lynn County, for 148 b/d of 35-gravity oil through perforations at 4,476-80 ft. and 4,503-07 ft. The opener is 2 mi. southwest of Suniland field.

Mississippi—Placid Oil Co. No. 1 U.S.A., section 27-7n-9w, Wayne County wildcat 13 mi. northeast of Ovett field, flowed 50 b/d of 18-gravity oil through perforations at 8,120-28 ft. in the Tuscaloosa.

New Mexico—Pan American Petroleum Corp. No. 1-C Navajo, section 1-29n-17w, San Juan County, recovered 1,680 ft. of oil and 690 ft. of heavily oil- and gas-cut mud on four-hour drillstem test of the Mississippian at 6,975-7,026 ft. The prospect is 3 mi. northwest of Hogback field.

Kansas—Miles Jackson No. 1 Ruda, section 23-4s-33w, Rawlins County, was completed as a new pay opener in Waterman field for 87 b/d on the pump through perforations in the over-all interval at 3,972-4,087 in the Lansing-Kansas City. The field now produces from the Marmaton.

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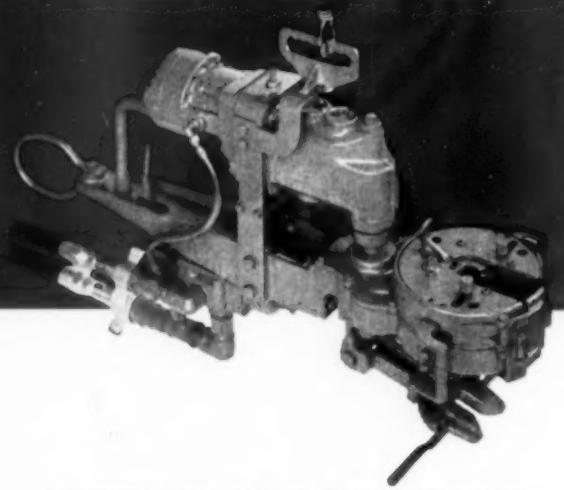
Hydraulic Power

SUCKER ROD WRENCH



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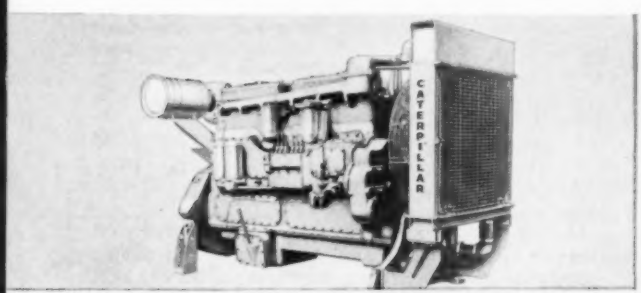
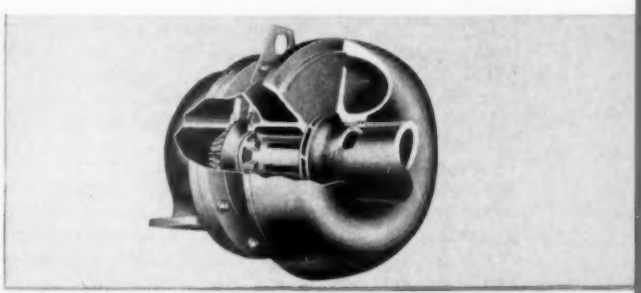
Whether you need prime or auxiliary power for drilling, laying pipe, pumping or powering a crew boat, the new Caterpillar D342 Diesel Engine helps cut costs and step up production. It's available in three versions —industrial, marine and electric set, both turbocharged and naturally aspirated. Ask your nearby Cat Dealer to show what it can do for you or specify its top performance on your new equipment.

Engine Division, Caterpillar Tractor Co., Peoria, Illinois, U.S.A. Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.



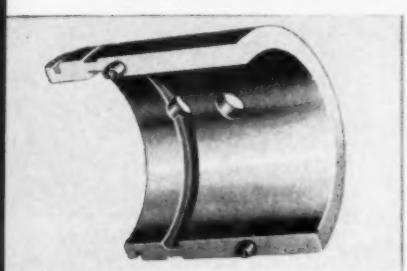
The turbocharged D342 develops 320 HP (maximum output) and 260 HP (intermittent), both at 1,300 rpm. For continuous duty it will produce 220 HP at 1,200 rpm. It measures 90 inches long, 44 inches wide and 60 inches high.



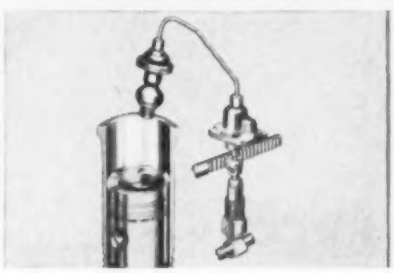
Turbocharging uses energy from the engine exhaust gases to pack more air into the cylinders. Fuel consumption per horsepower-hour is actually lowered and efficiency raised when this otherwise wasted exhaust energy is put to work.

These vital parts reduce down time, save you money

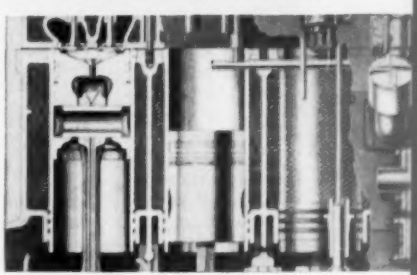
Steel-backed aluminum alloy bearings have great strength and durability. Their rapid heat dissipation means cooler running for very long life.



Fuel assembly, designed and built by Caterpillar, features individual fuel injection pumps and large, single orifice valves to prevent fouling, even when engines idle for long periods.



Full-length, wet-type cylinder liners are induction hardened. Liners are chemically treated to retain oil on liner walls. Pistons ride with minimum wear, heat is dissipated rapidly.



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See why ALCOA ALUMINUM makes a good design habit

Requirement: Preserve the purity of chemical products in transport

Key to Good Design: Use tank cars, trailers and containers made of Alcoa Aluminum

Just as aluminum preserves the purity of chemical or petroleum products during processing, so it protects them on the way to the customer. Processors of ammonium nitrate, nitric acid and hydrogen peroxide depend on aluminum containers for moving their products because aluminum does not discolor, contaminate, or in any way alter the product as other metals can, and often do.

Tank cars, hopper cars, trucks and tanks made of ALCOA Aluminum resist corrosive attacks from a wide range of liquids and gases. Such containers are also nonsparking, for increased safety in transporting explosive or volatile products. For shipping hot ladings, ALCOA has developed aluminum alloy 5454 which combines high strength with metallurgical stability at elevated temperatures.

The flow chart below illustrates the acceptance of aluminum for transporting chemicals. Aluminum tanks and tank cars are used in the entire distribution system for nitrogen fertilizer solutions.

Other advantages of using this versatile metal for truck and trailer bodies and tanks are its light weight and high impact resistance. Aluminum tanks for highway vehicles are lighter than any other suitable metal. They offer real savings in a higher ratio of payload to gross weight, with less wear on the vehicles.

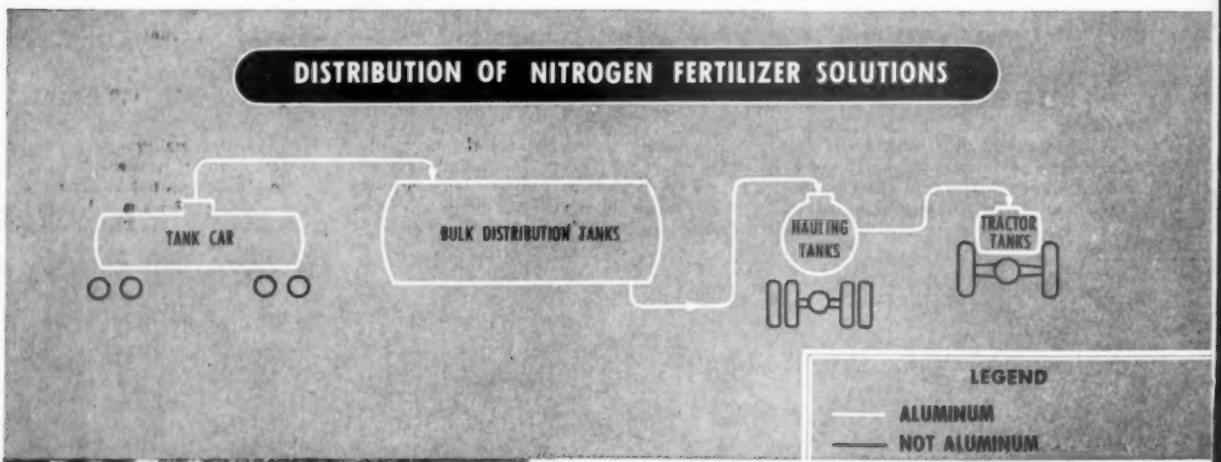
Aluminum's high impact strength is reflected in records of highway accidents. These show that aluminum tanks and truck bodies have survived and returned to service where tanks made of other metals have failed.

Tank cars, trailers and containers are easy to fabricate with aluminum. Highly workable alloys available from ALCOA lend themselves to standard welding and brazing techniques.

ALCOA engineers have worked closely with all segments of the process industries for over 40 years, and can help you specify the aluminum tank or container best suited for your product transport application. ALCOA's unparalleled experience in this field is available to you for the asking. Write to the address on the coupon, stating your requirements as specifically as possible. ALCOA's development engineers will welcome the opportunity to work with you on your problems.

You can also take advantage of the wide selection of free ALCOA literature on aluminum for transportation products and other process applications. Simply check the booklets you want on the coupon and mail to the address indicated. ALCOA will forward your material promptly and without obligation.

During 1959, ALCOA will conduct engineering conferences in a number of major cities on process industries applications of aluminum. Contact your nearest ALCOA sales office for full particulars and data.



Alcoa Aluminum is used throughout the entire distribution of nitrogen fertilizer solutions, as shown in this flow chart. The ammonium nitrate in these solutions does not attack aluminum.

Barges fitted with aluminum tanks permit a greater payload at a given draft. Transport of acetic anhydride is shown here.

Aluminum hopper cars are widely used to transport sulfur and sulfur-bearing coal, and other solid products used in the processing industries.

Alcoa makes a wide variety of shipping containers for the processing industries. Conforming to ICC regulations, these containers range in size from 7½ to 110 gal, and are used for shipping such diverse products as beer and fuming nitric acid. Alcoa alclad beer barrels cost 30 per cent less, are 45 per cent lighter than barrels of competing metals, and give longer service life.

Aluminum truck, trailer and tank bodies offer substantial savings in payload because of their light weight. Aluminum is specified because it will not contaminate such products as distilled water, hydrogen peroxide, formaldehyde, fatty acids and other chemicals. Maintenance costs are lower since aluminum requires no special protective coatings. The trailer illustrated is fabricated from Alcoa Aluminum Alloy 5454, and is used for handling hot asphalt, sulfur and other hot ladings.

Alcoa research has developed special aluminum-magnesium alloys combining high strength with the compatibility of high-purity aluminum for peroxide service.

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- ☐ GL143 Alcoa Aluminum-Magnesium Alloys Suitable for Structural Welding Applications
- ☐ DD508 Aluminum Alloys in Tank Trucks and Tank Trailers
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'Super' Jet Fuels Can Be Made Now

Refiners can produce the better fuels that high-speed, high-altitude jet aircraft will need, with only minor processing alterations, according to engineers of Standard Oil Co. (Ind.).

In order to carry heavy loads at supersonic speeds, tomorrow's jets will require fuels which:

(1) Are compact—that is, deliver more energy from less fuel volume, to save space; (2) do not freeze at moderately low temperatures, or form crystals that would handicap their pumpability; (3) do not boil at moderately high temperatures; (4) burn cleanly, leaving no combustion deposits on injector nozzles and air inlets.

Present jet fuels, which are blends of paraffins, aromatics and naphthenes, will not be adequate as high-energy aircraft fuels.

Paraffins burn well, but have low volumetric heating values and generally high freezing points. Aromatics have high volumetric heating values and practical handling properties, but poor burning qualities.

But certain types of naphthenes, when taken out of the blend, appear to have the needed properties.

These are the alkyl naphthenes of the bi-cyclic type, in the group having 11 to 14 carbon atoms.

- They are compact; the Indiana Standard researchers found that density depends mostly upon arrangement of the atoms in the molecule, that cyclic hydrocarbons are denser, and that density increases with the number of cyclic rings.
- They burn as satisfactorily as kerosene-type fuels.
- Their thermal stability is considerably higher than that of present jet fuels, and their freezing points are much lower than actually required.
- Their volatility is acceptable.

These naphthenes can be made from high-boiling aromatics, found in catalytic-reformer bottoms and in cycle oils from catalytic cracking, by distillation or solvent-extraction, followed by hydrogenation.

The desired bi-cyclic naphthenes are then concentrated by distillation of the hydrogenated products. As much as 20% of light catalytic cycle oil could be converted into concentrated bi-cyclic naphthenes by combination of hydrogenation and distillation. The product resulting from hydrogenation of the catformer bottoms contains up to 94% bi-cyclic naphthenes.

As much as 2% of total crude runs could be converted to high-performance turbojet fuel.

Understandably, the engine builders will explore the field of nonpetroleum as well as petroleum products in their quest for fuels meeting these requirements.

But the oil refiners will meet the challenge, in the opinion of J. B. Beverly, Robert F. Marshner, W. J. Zimmershied, B. L. Mickel, R. A. Hunt, and M. J. DerHerder of the Research & Development Department of Standard Oil Co. (Ind.). Their views were presented at the recent meeting of the American Chemical Society, in Boston.

Lube Stocks from Isomerized Wax?

Isomerization of paraffin waxes can give high-viscosity, low pour-point stocks suitable for use as lubricating oils, according to experiments by J. W. Gibson, G. M. Good, and G. Holzman, of Shell Development Co., Emeryville, Calif.

The Shell studies used normal (straight-chain) paraffin waxes ranging from 20-carbon chains up to 48-carbon chains. The resulting isomerate fractions had pour points as low as —65F, with viscosity indices as high as 137, according to the report that the Shell researchers made to the recent meeting of the American Chemical Society, in Boston.

Both liquid and solid isomers are obtained during the hydroisomerization of paraffin waxes.

The isomers most useful for lube manufacture are the uncracked liquid ones. Of the remaining liquids formed, some are cracked products with properties similar to those of the uncracked isomerate and others are too extensively cracked to be useful as lube stocks. The solid isomers are not useful for lubes.

Mild isomerization conditions and the use of a naphthenic inhibitor minimize the cracking that normally occurs when trying to isomerize high-molecular-weight hydrocarbons.

Up to now, the isomerization of normal paraffins with so-called Friedel-Crafts-type catalysts has been limited to butane and pentane. Even for these materials, some cracking occurs under isomerization conditions.

The Shell procedure operates at room temperature (25C), uses a very high hydrogen-to-feed ratio, and uses a naphthenic inhibitor, such as decalin, to reduce cracking tendencies.

Three paraffin-wax feedstocks were tested by the Shell experimenters. Two of the feeds, one with the basic formula of $C_{20}H_{42}$ and the other with the basic formula of $C_{29}H_{60}$, were purified to give better than 99% normal paraffins.

The third feedstock was a mixture with the empirical or average formula of $C_{48}H_{98}$, which was obtained from an East Texas petroleum residue.

Conversion of paraffin wax with 20-carbon molecules was about 48% complete. About 28% of the reaction products were cracked, the remainder consisting of four isomeric products.

Not more than 1% by weight of aromatics were formed by dehydrocyclization of the paraffins. All of the 20-carbon isomers were liquids.

When isomerizing paraffin wax with 29-carbon molecules, conversion was about 51%, with about 39% of the reaction products being cracked.

Of the uncracked product (the isomerate) less than 1% was in the form of aromatics. However, 30% of the five isomeric products identified were solid.

Cracking was especially noticeable during the isomerization of the 48-carbon paraffin wax. On a feedstock basis, 32% was cracked to liquid below the feed boiling range.

Of the 22% of the feedstock which was isomerized, 60% of it was solid, the remainder being a liquid with a high pour point of 55F.

A check run was made on a naphthene-containing wax, from Mid-Continent crude, to determine whether similar results could be obtained from a nonparaffinic wax.

Saturated fractions of the isomerate were good; they had low pour points, and viscosity indices in the range of 134 to 154 over a viscosity range of from 3 to 5 centistokes at 210F.

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Cash in on the opportunities for increased sales to building contractors, highway and road-construction companies, and other heavy-equipment users in your area.

Offer contractors the best and fastest on-the-site service. Offer a complete line of top-quality petroleum products—the *Sun* line, packaged under your own name for extra prestige and identification.

Sun products have a reputation for lengthening equipment life and reducing down-time for repairs.

Get details about the complete Sun line of top-quality lubricants, and the help Sun gives you in selling to the construction industry. Call your Sun representative or write directly to Sun Oil Company, 1608 Walnut St., Philadelphia 3, Pa. PW-4

GENERAL WHOLESALE DEPARTMENT

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"Pump more oil"

By the time you get a good test on this pump, it will probably have paid for itself!

For one oil company (name upon request) a Double-Displacement Rod Pump paid out before the test was even completed!

If your wells are beginning to pump too much water and you must move more fluid to make your allowable, or if you would like to quit pumping so hard so you can slow down your pumping units (thereby saving wear and tear on your equipment) — ask your store, or one of our representatives, about a Double-Displacement Rod Pump.

The Double-Displacement is a traveling barrel, bottom hold-down assembly made up of two plungers and two barrel tubes which work simultaneously with a single set of valves. In operation, the assembly produces as two separate pumps made up in tandem which virtually doubles the volume of the unit — as compared to the displacement of comparable-sized pumps. The Double-Displacement also has the additional operating advantages of an insert-type pump which can be run and pulled on the rods. Hundreds of these pumps are in daily operation throughout the Mid-Continent and Gulf Coast areas, including many water flood projects.

H-F Double-Displacement Rod Pumps are available in a wide range of metal-to-metal, H-F "Flexite,"® or soft packing plungers with chrome-plated or heat-treated barrel tubes in 2"x1½", 2½"x2", and 3"x2½" sizes.

If you think a Double-Displacement Pump might solve the production problems you have been having with your wells — talk to your store, one of our many factory representatives throughout the oil patch, or write to us at P. O. Box 127 in Fort Worth. We'll be glad to send you complete details, illustrated literature, and comparison data without obligation.

NOTE — *This is the original Double-Displacement Pump — marketed by Harbison-Fischer in 1950 . . . not to be confused with imitation pumps which do not measure up to the performance record that hundreds of Double-Displacement Pumps have always enjoyed throughout the oil patch. When you run a Double-Displacement Pump, be sure you get the genuine original.*

"Pump More Oil"

HARBISON-FISCHER
Double-Displacement
PAT.
ROD PUMPS

"Best Pumps in the Oil Patch"®

Under extreme conditions . . .

Synthetic Lubes Stand Up Well

Polyphenyl ether lubricants stand up better than conventional lubes under extreme conditions of temperature, oxidation, and radiation, according to results of studies by Shell Development Company.

The ever-increasing speed of turbojet aircraft, and the possibility of using nuclear power for their propulsion, raise the question of stability of their lubricants under extreme operating conditions.

In an effort to determine the relative values of conventional lubricants with additives, and of synthetic chemicals of petroleum origin, Shell Development, under the sponsorship of the U.S. Air Force, conducted an intensive research program, monitored by the Wright Air Development Center. The results were presented at the recent meeting of the petroleum chemical division of the American Chemical Society, in Boston.

Research was concentrated on aromatic hydrocarbons, since they are known to resist radiation better than aliphatic compounds. Polyphenyl ethers were selected as offering the greatest potential.

Comparative tests were made with these ethers, in their meta-, para-, and ortho-linked isomer forms, and with some in which alkyl radicals such as methyl, cumyl, or butyl had been substituted onto the benzene ring. These polyphenyl ethers displayed good lubrication qualities, those of the alkyl-substituted ethers being better in every case.

The viscosity of polyphenyl ethers is good at high temperatures, Shell found.

Unsubstituted polyphenyl ethers show better thermal stability than the alkyl-substituted group: They seem to allow a margin of about 200F in operation above present-day mineral oils and ester-base lubricants.

Oxidation stability of polyphenyl ethers is considerably better than that of conventional lubricants—even those containing antioxidants.

The unsubstituted polyphenyl ethers show excellent oxidation stability, but substitution of alkyl groups appears detrimental in this respect. And no known type of inhibitor will upgrade the oxidation stability of such compounds, Shell said.

Radiation appears to have fewer

Seeing is believing . . .

Q-BROXIN*

controls flow properties *in drilling mud*

THIS IS PUGET SOUND PULP AND TIMBER FEBRUARY 24 1959 200 PM
MSG FOR MR ROBERTS BAROID DIVISION NATIONAL LEAD CO
SUBJECT Q-BROXIN PRODUCTION INCREASED

PLANT EXPANSION PROGRAM INCREASING Q-BROXIN PRODUCTION NOW COMPLETE. NEW PLANT FACILITIES GIVE 70 PERCENT INCREASE IN OUTPUT CAPACITY. UNFORESEEN DEMAND ARISING FROM VERSATILITY, EFFICIENCY AND WIDE ACCEPTANCE OF Q-BROXIN AS MUD TREATING COMPOUND CAN EASILY BE MET FROM EXPANDED PLANT.

PUGET SOUND INVESTED BETTER PART OF MILLION DOLLARS ON EXPANSION IN LINE WITH PROMISE TO FULFILL ANY DEMAND DEVELOPING AND TO MAINTAIN ESTABLISHED RELIABILITY FOR QUALITY.

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VERY GOOD
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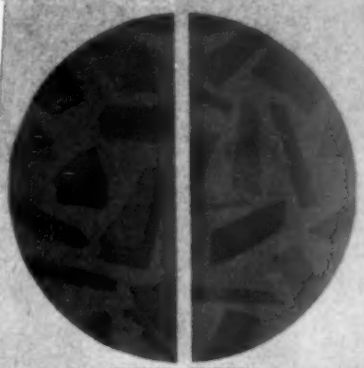
Note to Baroid Field Men —
Thank our friends and customers for their acceptance of Q-BROXIN. It expresses their confidence in the product, and in Baroid's ability to help solve their drilling mud problems.

R.H.R.



AGGREGATED DISPERSED

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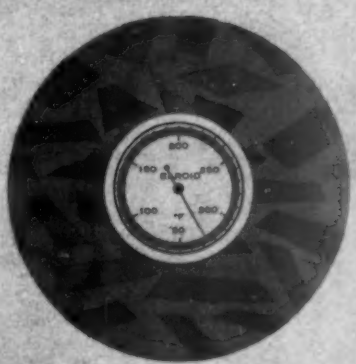

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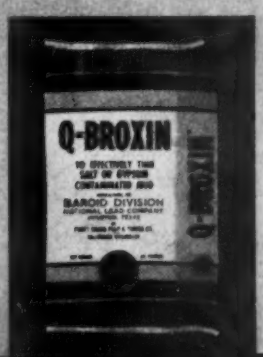
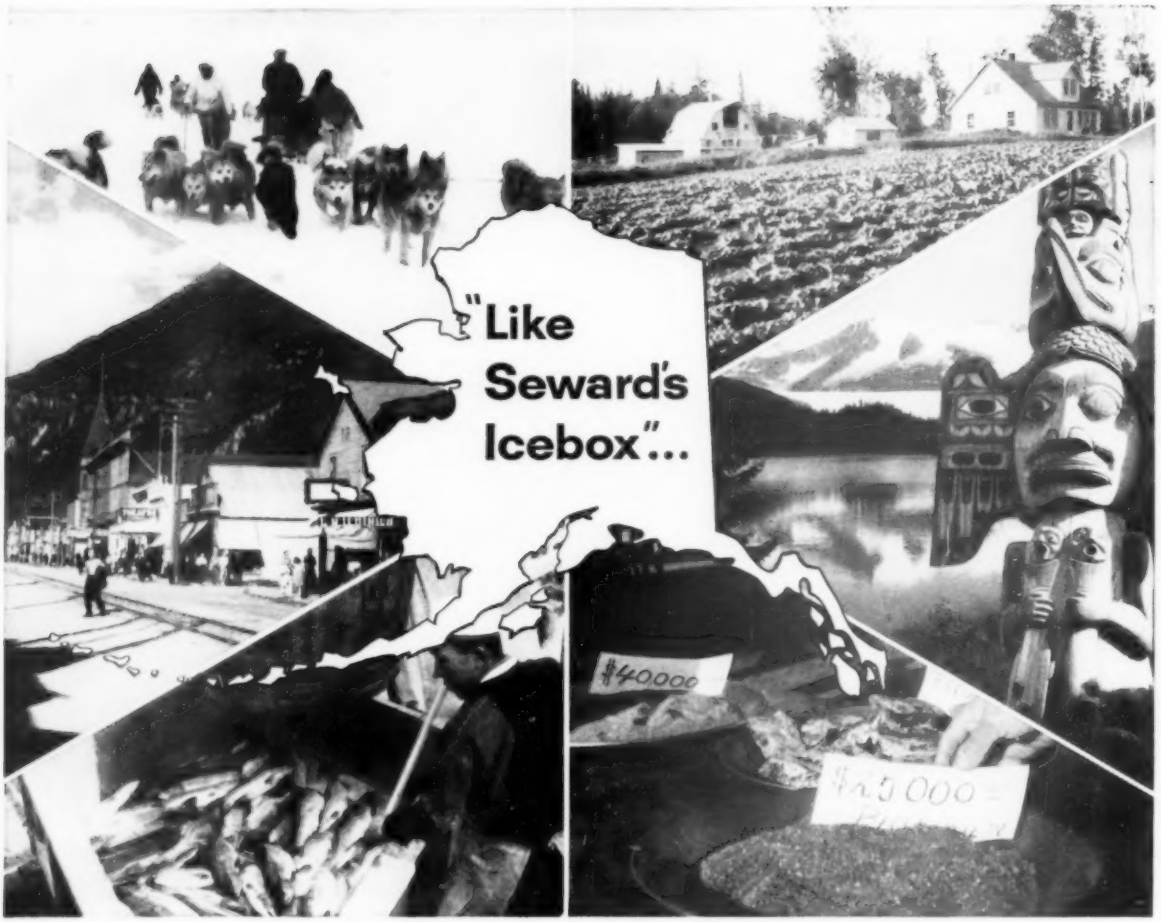




More than twice the size of Texas, Alaska was purchased for less than two cents an acre. Has since yielded nearly 100 times its purchase price in gold output alone. The 49th state is also rich in oil, minerals, lumber, fish, and furs.

OIL'S FIRST CENTURY
BORN IN FREEDOM
WORKING FOR PROGRESS

there's more to Cities Service than meets the eye!

Some dubbed it "Seward's Icebox," others "Seward's Folly." Critics simply could not foresee that Secretary of State William Seward's purchase of Alaska for $7,200,000 would return many times its price.

So it was, also, with Edwin Drake's first oil well at Titusville, Pennsylvania, in 1859. Who ever dreamed that petroleum would become our chief source of power!

Providing this power . . . plus countless oil-derived products of comfort and convenience – requires a vast network of facilities. It is a tremendous job . . . most of it unseen by the public.

Moreover, it is a job which will continue to grow, a fact progressive oil companies recognize in their planning. In the past two years, for example, Cities Service has spent more than $350 million building for the future.

Only in this way can America be given what she needs for progress – more jobs, more and better petroleum products.

CITIES SERVICE

ill effects on polyphenyl ethers than it has on conventional lubricants.

Their viscosity is less affected by radiation than that of aliphatic hydrocarbons, phenyl silicones, or esters.

Antioxidant activity of conventional inhibited lubricants is very sensitive to radiation, Shell found. Lubricants containing 5% by weight of oxidation inhibitor lost all antioxidant property after irradiation with gamma rays up to 10-billion ergs per gram. And combination of radiation and high-temperature oxidation destroyed all antioxidant activity before 5-billion ergs per gram were absorbed.

Several of the polyphenyl ethers, when subjected to simultaneous irradiation and oxidation, showed only slightly greater deterioration than that due to oxidation alone.

The unsubstituted samples were more stable than the alkyl-substituted ethers when subjected simultaneously to irradiation and to oxidation.

Further investigation is under way, not only on the use of these chemicals as lubricants for turbojet engines, but also as high-temperature hydraulic fluids, and as base stocks for greases which must resist high temperatures and radiation.

What's New / IN PROCESSING

Royalite Oil Co., Ltd., Cities Service Co., and Richfield Oil Corp. will carry out a joint research and development program on Athabasca tar sands.

A pilot plant is already under construction for the program at Mildred Lake, Alberta, to determine technical and economic feasibility of recovering liquid hydrocarbons from the sands.

•

British American Oil Co., Ltd., has started construction on a $4-million expansion of its Pincher Creek (Alta.) gas processing and sulfur recovery plant.

The expansion will raise the plant's raw gas capacity from 120-million to 180-million cf/d, and increase the production of propane, butane, and condensate. It will also enable all three of the plant's sulfur units to operate at full capacity, a total of 675 long tons a day.

•

Sun Chemical Co. is selling the physical and business assets of its wholly owned subsidiary, Warwick Wax Co., to Western Petrochemical Corp.

Warwick has been a subsidiary of Sun Chemical for 15 years. Western Petrochemical is a new company, which will be headed by Warwick's founder and general manager, Maurycy Bloch.

A several-million-dollar growth program is planned for the wax company, including introduction of a new line of polyhydrocarbons to be used as fortifiers and extenders of various synthetic resins.

Foster Wheeler Corp. will be acquired by North American Aviation, Inc., if stockholders of the two companies approve.

"The proposal affords to everyone in the Foster Wheeler organization a greater opportunity through a broadening of our interests," says W. L. Martwick, Foster Wheeler's president.

The plan contemplates exchange of one share of North American stock for each share of Foster Wheeler stock.

•

Husky Oil Co. has bought the refinery equipment of the Batzer Oil Co. refinery at Lovell, Wyo.

The Lovell refinery was closed several weeks ago. It had been purchased from Ohio Oil Co. 2½ years ago by Batzer.

Husky officials say the salvaged property probably will be used to expand the capacity of the Husky refinery at Cody, Wyo.

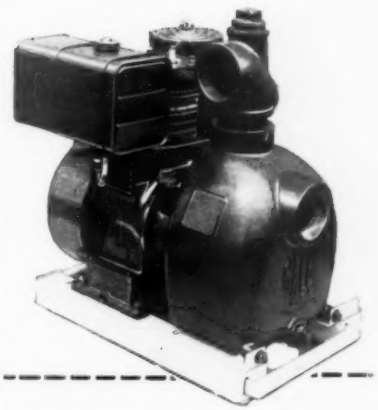
•

The German petrochemical plant of Erdoelchemie GmbH has started operations at Dormagen, Near Cologne.

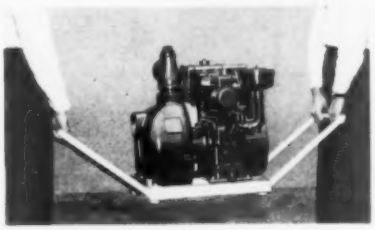
Included in the plant are a unit to crack petroleum fractions, a gas separation unit, and units to make ethylene oxide and ethylene glycol.

Investment in the plant so far amounts to about $29-million. Other production units still under construction will bring total investment up to $71.4-million in 1961.

Ultimate capacities will be 200,000 tons a year of feedstock to the steam cracker, producing 45,000 tons a year of ethylene.



A general Utility Pump
2 Men Can Carry Anywhere!



The
HALE 30-T

Weighs only 143 lbs.
Pumps 20,000 G.P.H.
at free flow discharge
with ample reserve

Two men carry this new Hale pump anywhere you want to use it . . . fast. Use it to pump out tank battery fire walls, as a circulating pump to pull water from the bottom of the tanks, and to re-circulate bad oil through the treating system.

The dependable 30-T "Torrent" features a semi-open impeller with "clogless" type operation and external adjustment for wear; a simplified self-priming system that eliminates fussy valves and gadgets; simple "O" ring seals, instead of gaskets. Powered by a 9 h.p., Briggs and Stratton, 4-cycle engine. Also available in HALE'S protective, wrap-around frame; mounted on wheels; or on rubber-cushioned steel channels.

also the 30-T's rough, tough kid brother . . . the "TORRENT" Model 20-T

Pumps 7,000 U.S. G.P.H. with ample reserve. 3 Models to choose from: Model 20-T Gasoline Driven Unit; Model 15TP Pedestal Pump for available power; Model 15TPE Electric Motor Driven Unit.

Write for full information and prices today to Dept. PW

HALE FIRE PUMP CO.
Conshohocken, Pa.

the completely new continuous process

MOL

that removes lowest-grade hydrocarbons,

Removes normal paraffins from gasoline
Now any refiner can produce super-quality gasoline—economically! With the new continuous process, Molex, you can now accomplish what even the most severe reforming cannot do alone: Without interruption of feed and product streams, you remove normal paraffins covering the entire gasoline boiling range . . . rid your product of grossly inferior materials . . . produce the kind of gasoline that motorists want to buy!

Performs ultra-sharp separations—achieves 99% product purity
Molex separations are sharp. Product purity of over 99% is not unusual—and extended pilot plant performance proves this superior quality can be consistently maintained. Taking out virtually every trace of lowest quality components raises the "octane ceiling" on your gasoline production, substantially increases the octane number of your product.

Minimizes octane increase requirement—keeps customers satisfied
The refiner using Molex can attain his quality requirements with a cleaner

More Than Forty Years of Leadership in Petroleum Refining Technology

UOP®

MOLEX*

*TRADEMARK

purifies and upgrades gasoline

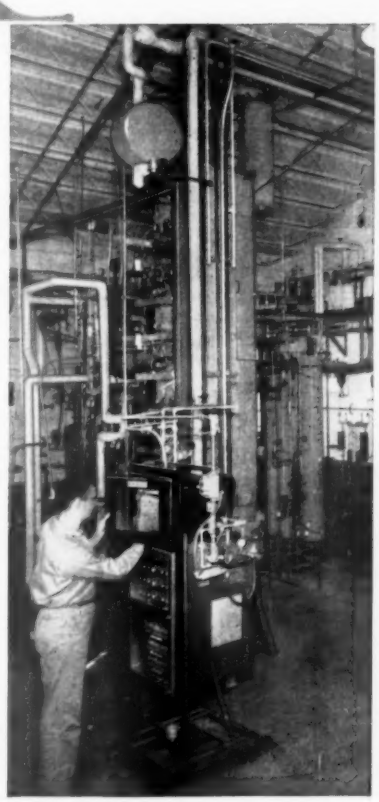
burning fuel having a minimum concentration of aromatics. Higher octane numbers are attained without high percentages of aromatics. Combustion deposits are reduced and customer satisfaction increased.

Lowers concentrations of aromatics, decreases sensitivity

Through use of Molex you attain your octane specifications with lower concentrations of aromatics. Without sacrificing yield or giving away octane number, you meet exacting sensitivity specifications, produce more versatile gasolines which will perform better under a wider range of engine and operating requirements.

Moderate initial and operating costs

The cost of installing and operating Molex is surprisingly modest—lower, for example, than in separation of normal compounds from mixtures of pentanes and hexanes. Considering the increased purity of product, decreased sensitivity, increased octane, continuous operation and other benefits provided by Molex, you will agree that here is a truly unique new process! *Write for further information.*



Part of facilities used in pilot plant stage of developing and proving Molex process.

UNIVERSAL OIL PRODUCTS COMPANY

30 Algonquin Road, Des Plaines, Illinois, U.S.A.

SAHARA SPREAD WORK is no easy proposition, as contractors on the upcoming 24-in. Hassi Messaoud crude line can attest.

STEEP SLOPES in the Atlas Mountains and at the "Iron Gates" beyond made necessary a large crew and heavy machinery.

Sahara Pipe Laying: Rough, Dangerous

American pipeline contractors often run into tough laying conditions. But they never have to face the combination of troubles now confronting contractors on the 24-in. Sahara crude line—mountains, ravines, desert, and unfriendly natives.

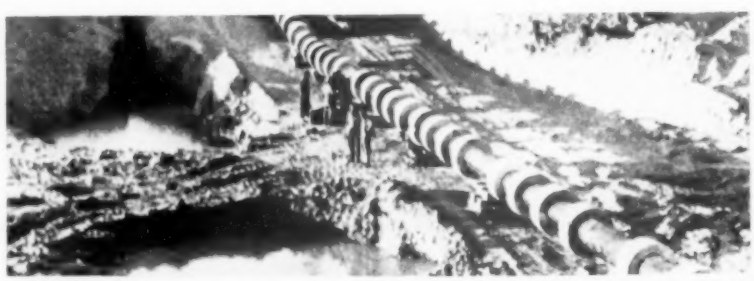
The 450-mi. line from Hassi Messaoud, in Algeria, to Bougie, on the Mediterranean, will be finished and carrying about 200,000 b/d of crude around mid-year.

Roger Martin, executive vice-president of Pont-a-Mousson, a French contractor on the line, recently outlined difficulties in building the line:

"We are putting the pipeline across the Atlas Mountains through 3,000-ft. high Seletna Pass, with slopes on both sides reaching 32½ degrees. Farther along, the pipeline jumps the 'Iron Gates,' the name given to a rocky barrier 1,800 ft. high, with slopes up to 75 degrees."

The rugged terrain has made necessary a big spread force—about 600 men—and use of $3-million worth of machinery. And much of the work has had to be done under the protection of French troops.

OPENING THE "IRON GATES," 1800 ft. high with slopes of 75 degrees, was a job that required the use of explosives by Pont-a-Mousson, the contractor.



PROTECTING TROOPS stand by the line before it was ditched through rugged Oued Bou Amadou. The line, despite conditions, will be finished later this year.

Major Tanker Technical Problems Fade

Tanker operators may be having a hard time coping with the economic problems now confronting them, but they're making good headway on their major technical problems.

That was the feeling in New Orleans this week, where hundreds of the oil industry's marine transportation experts are meeting at this year's tanker conference of the American Petroleum Institute's Division of Transportation.

Experts this week predicted a distressed tanker market for at least two more years.

D. C. Hamilton and J. S. Weatherby, of Atlantic Refining Co., told the meeting that "the tanker market will remain in distress for a minimum of two or three years, if not longer."

Hamilton and Weatherby pointed out that the current tanker market is largely the result of overbuilding, and of a reduced rate of growth in world tonnage requirements.

"A substantial improvement in these conditions," they predicted, "is most unlikely over the near term."

But if it's any consolation, progress in solving tanker operators' traditional technical problems is picking up speed. The best news on this front is on new successes in limiting tanker corrosion.

Tanker corrosion has traditionally been one of the chief factors that interfere with significant reduction in tanker operating costs (PW—Jun.13 '58,p47).

Now, several different approaches to the problem hold out great promise of a solution, according to the men working on these approaches:

• **In cathodic protection, zinc anodes now appear to have advantage over magnesium anodes,** according to R. W. Moore and E. E. Nelson, of Socony Mobil Oil Co.

"In the past," Moore and Nelson said, "the use of commercial zinc as a sacrificial anode in sea water has not been too successful, because the zinc became ineffective as a result of a coating of a corrosion product.

"Recent improvements in the purification and alloying of zinc have overcome this difficulty."

The main advantage of zinc over magnesium, according to Socony Mobil's research: "At today's prices, zinc can furnish current at half the price of magnesium."

• **Dehumidification of tanks also appears to have increasing promise as a corrosion-cutter.**

A research team from Cities Service Oil Co. and Cities Service Research & Development Co. described this potential in these terms:

"At the moment, all evidence indicates that adequate protection is actually being received by all tank members above the bottom level, and that, based on steel renewal costs, dehumidification will save about $95,000 per ship per year in corrosion costs."

• **New bottom-wash and ventilation techniques for corrosion control of tankers in clean service also have an increasing number of supporters.**

American Oil Co. is particularly happy with the results of its work along these lines. Amoco's W. G. Bolger and P. J. Naquin described the company's work—and its results—this way:

"The use of fresh-water bottom wash and mechanical ventilation reduced corrosion by 40% over a seawater bottom wash, and by 75% over conventional seawater butterworthing."

• **New coatings for tanker walls may prove to be the best of all anti-corrosion measures.**

J. F. Kochler, of Esso Standard Oil Co., said that the company's work with such coatings—vinyl, epoxy, and inorganic—has been most satisfactory.

There's also new hope for solving a tanker design problem that has arisen with the development of the larger supertanker—accurate measurement of the vessel's longitudinal strength.

David P. Brown, president of the American Bureau of Shipping, outlined progress in this field this way:

"Measurements [of bending stresses] on ships at sea have been very meager and quite inconclusive . . . but improved instrumentation may provide a means for more comprehensive and accurate data. . . .

"But there is still a great need for information regarding the sea conditions which should be simulated. Oceanographers and meterologists are expected soon to be able to fill this need."

What's New / IN TRANSPORTATION

Export of Alberta natural gas to the U.S. came a step closer last week with approval of export plans by the Alberta provincial government.

The Alberta government, acting on the recommendation of the Alberta Oil & Gas Conservation Board (PW—Apr.3'59,p64), approved plans of Westcoast Transmission Co., Ltd., and Alberta & Southern Gas Co., Ltd., to send up to 565-million cu. ft. of gas daily into the U.S., primarily for California markets.

The Canadian federal government will now have to approve the plans—and soon, it is felt, if the Alberta gas is to be put on its way to American markets before other sources of supply for the markets firm up.

The U.S. Federal Power Commission, which is studying these alternate supply plans, would also have to approve the Alberta-to-California plans.

•

The "Methane Pioneer" is back at Lake Charles, La., after making the first experimental transoceanic delivery of natural gas at Canvey Island, near London (PW—Feb.27'59,p11).

The ship, which delivered 32,000 bbl. of liquid methane to London gas companies, carried 1,400 bbl. of the liquid on its return trip, so that additional study could be made of its equipment. The Pioneer is scheduled to make several more such trips.

•

Ogden Corp. has purchased Avondale Marine Ways, Inc., of New Orleans. Avondale will continue to operate under its present name, with operating policies, management, and personnel unchanged.

•

Alberta Gas Trunkline Co., Ltd., has just begun work on a 122-mi. extension of its mainline from Princess to Torrington, Alta.

The 34-in. mainline extension is expected to cost about $16-million. At Torrington, Alberta Trunk will build two 16-in. laterals—one 46 mi. to the Nevis area, another 33 mi. to the Carstairs area.

DEPT / International

Nigeria's Oil:

IN MANGROVE SWAMPS, seismic workers push equipment-laden canoes in knee-deep mud.

EXAMINING A SEISMIC RECORD in their instrument launch are a Shell-BP man and his Nigerian assistant. Seven seismic parties are now at work in Nigeria.

THIS 10-IN. PIPELINE was run 65 mi. through jungle from Oloibiri field to Port Harcourt.

SHELL-BP'S DRILLING BARGE in a typical delta location. The derrick stands on a platform held by four concrete piles driven 120 ft. in the river bed.

An Unsolved Puzzle

What is Nigeria's future as an oil-producing country? Shell-BP Petroleum Development Co. is still trying to answer this question after its first full year of continuous production.

The first oil exports from this British territory on Africa's West Coast were started in February, 1958. At the same time, the company moved ahead with further appraisal and exploratory drilling. It is still not certain, however, whether the area will warrant construction of permanent export facilities in the swampy coastal area that lacks a natural harbor (PW—Jan.24 '58,p38).

To date, the 22-year oil hunt has cost Shell-BP over $117-million. Of that total, $41-million was a spent in 1958, an average of $3.4-million a month. Exports in 1958 averaged 5,164 b/d. This year, $4,660,000 a month is expected to be spent, for a total of $56-million.

Shell-BP now considers results to date "rather disappointing" both as to production and appraisal drilling. In fact, the company told PETROLEUM WEEK, "it is already certain that geological conditions in Nigeria are in no way comparable with those in countries with prolific production, such as the Middle East or Venezuela.

Shell-BP has just started its fourth appraisal program, the results of which may "to a great extent strengthen or frustrate the company's hope of eventually reaching economic production."

The new appraisal program is being carried out in the Eastern Region, at Bomu, where oil was found in "encouraging quantities" in 1958. So far, two appraisal wells have been completed as oil wells. Others are slated.

Unlike most of the Delta areas, the Bomu structure is on flat, well-cultivated country. It is 12 mi. south of Afam oil field, and about 20 mi. southeast of Port Harcourt, the present export terminal.

So far, drilling in the three oil areas has resulted in a high percentage of dry holes; roughly 50%.

For the past year, the company's appraisal drilling has been concentrated on the Oloibiri and Afam oil fields, responsible for most of Nigeria's output today. These two fields are over 100 mi. apart, in different types of country.

Appraisal drilling at Oloibiri has been suspended after drilling 16 wells, 11 of which are producers. Though the Oloibiri discovery in 1956 raised "bright hopes of future production," Shell-BP says appraisal drilling has shown the accumulation to be much smaller than originally expected.

"Indications are," the company told PETROLEUM WEEK, "that factors affecting accumulation are unusually complex, and it appears that production operations will be also.

"Many production troubles were experienced from the inception of test production, including the serious problems of wax, sand, and water encountered in the wells, which adversely affected the rate of production."

Some 3,000 b/d is produced from the existing Oloibiri wells, however.

"It is obvious," the company adds, "that more experience of actual production operations in Oloibiri must be gained to evaluate more thoroughly its economic aspects."

In the meantime, a detailed geological and seismic program at Oloibiri is being undertaken, on a "comparatively large scale," to determine whether further drilling is justified at a later stage.

Appraisal drilling at Afam is being continued. In this field, only six of the twelve tests drilled so far are producers. And the results of the program have shown, the company says, that in many respects "Afam is in fact almost as difficult as Oloibiri."

The company's first appraisal program was carried out at Akata, also in the Eastern Region, where Nigeria's first discovery was made in 1953. Seven appraisal wells were drilled. Two of them were abandoned due to technical difficulties. Of the remaining five, two found some gas, but none found oil.

By early this year, Shell-BP had completed 33 exploratory tests, with a total footage of some 340,000 ft. Of these, 11 encountered comparatively good shows of oil—including those at Akata, Oloibiri, Afam, and Bomu.

The possibilities of the other seven shows, which include Soku and Krakrama in the swamps of the Delta, Ebubu in Ogoni Division, Obibgo in Aba Division, and Ituk and Uquo in Calabar, still have to be further investigated. In 1958 alone, 14 of these wells were completed, with 5 encountering oil in "encouraging quantities."

Shell-BP has just recently had oil shows on two new tests—one at Korokoro, and the other at Anua.

In the past year, the number of drilling rigs has been boosted from six to eight, including a new $3.5-million drilling barge, which signalled the start of marine drilling in the tidal mangrove swamps of the delta area (PW—Apr.25'58,p68).

In addition, the company reports drilling techniques have improved.

A third small-diameter pipeline is slated to be built this year, running from the Bomu area to Afam.

The two others are a 30-mi., 6-in. line from Afam to Port Harcourt, and a 65-mi., 10-in. line from Oloibiri to the same terminal. The port area has two temporary storage tanks, with total capacity of 90,000 bbl.

Seven Shell-BP seismic parties are now at work—four in the Eastern Region and three in the West.

Shell-BP has carried out intensive geological and geophysical operations throughout its concession areas, which are spread out over the southern parts of Nigeria.

Altogether, 25 corcholes, with a total footage of nearly 60,000 ft., have been drilled for geological information. Both gravimetric and seismic surveys have been carried out.

Earlier this year, the company turned back some of its acreage in the northern part of the country.

Shell-BP may build a refinery eventually. Under an agreement with the Nigerian government, the company must build a refinery when production reaches 10,000 b/d.

Shipping the oil presents special problems. Tankers cannot pass over the Bonny Bar fully loaded when leaving Port Harcourt. Hence, most of the ships are only half-full, which would put Nigerian oil at competitive disadvantage.

The company has two options: It can either dredge a channel crossing at an estimated cost of $42-million; or build a pipeline out to sea, which would probably cost even more.

Shell-BP is the only company drilling in Nigeria. Socony is doing some seismic work on its properties, which cover about 4,000 acres in western Nigeria.

In the meantime, Nigeria is in the process of adopting a new 50-50 oil law. The Federal House of Representatives passed the bill at its last session, earlier this year. The bill provides for taxes, rentals, and royalties that will make up the 50% of net profits payable to the government, after deduction of certain expenses incurred outside and inside Nigeria.

German Firm Eyes Lebanon

BEIRUT—An expanding German company, owned partly by Esso and Royal Dutch Shell, is the latest to make a tentative pact to explore Lebanese oil rights held by Cie. Libanaise des Petroles, a locally owned firm.

CLP's previous efforts to line up backing for its long-idle acreage had fallen through in the past couple of years—first with tanker owner A. S. Onassis, then with at least two different groups of U.S. independents.

Its latest preliminary agreement was signed recently in Hannover, Germany, with Gewerkschaft Elwerath, a leading West German oil producing company, which also holds interests in several foreign areas. Esso and Shell each own 11½% of the firm. Another 33.9% is held by Wintershall, an independent German oil company. Most of the remaining 43.1% is held by a German estate.

Gewerkschaft Elwerath is insisting on an extension of CLP's concession area as one condition for a final agreement.

The 75-year exploration and development concession granted to CLP in 1955 covers 28 areas of 38.6 sq. mi. each. In addition, CLP was granted prospecting permits on 22 adjacent areas in 1956.

Elwerath says the concession area is inadequate for "serious" exploration. Its offer is thus conditional on CLP's being able to get the concession terms extended to the areas covered by its prospecting permits.

CLP has asked the Lebanese Council of Ministers to do this. The government's view, however, is that any extension—like the original grant—must be ratified by Parliament, and not granted by decree.

Before concluding a proposed 50-50 partnership with CLP, Elwerath also wants a chance to carry out preliminary seismic work, in view of the presence of tricky limestone strata.

Elwerath would carry out the work at its own expense, in the Nabatiya district of South Lebanon, a project it expects to be able to complete within three months.

If the partnership agreement is concluded, Elwerath reportedly would undertake to carry out 12 team-months of geophysical work, and to drill a total of 12,000 ft. of exploratory hole, in return for a half-interest in the CLP concession.

At the same time, the Lebanese company would first increase its capital to $900,000 (from $650,000) by a new stock issue on the Beirut exchange. Then CLP would double its capital by issuing shares in favor of Elwerath.

Elwerath, quietly fanning out into more foreign areas, is currently in process of getting oil rights in Libya, following its recent grant in Ethiopia (PW—Apr.3'59,p60).

The Libyan acreage, unofficially granted in March, is a 7,720-sq. mi. tract along the southern edge of Libya's Petroleum Zone I.

The Ethiopian concession, already officially awarded under 50-50 profit-sharing terms, covers 71,182 sq. mi.—almost identical with the borders of Ogaden province. The grant was made for a total of 50 years, including a 12-year exploration period.

Elwerath also holds concession interests in Switzerland. Its first foreign move, several years ago, was into Peru, where it joined two other German oil companies in a development agreement with a Peruvian firm. This group in 1957 established the new Maquia field in the Oriente region, east of the Andes.

Venezuela May Get 68% of Profits

CARACAS—Venezuela's new income tax rates will result in a 68-32 government-industry split of 1958 oil profits, according to the latest industry estimate.

The figure was quoted by Dr. L. Alcala Sucre, assistant to the vice-president of Mene Grande Oil Co., in a talk at a San Cristobal convention of the Venezuelan Federation of Chambers of Commerce & Industry.

Individual companies may pay more, or less, than this average, since the calculation is for the Venezuelan oil industry as a whole.

The 68-32 figure—while still an estimate—is higher than any previous calculation for 1958.

At the time the retroactive income tax was decreed last December, Finance Minister Dr. Jose Mayobre estimated that the government share of 1958 oil income might be anywhere between 59% and 66%, with the probability that it would be around 60%.

The progressive income tax rises to maximum 45% in the top corporate bracket, (compared with the previous 26%). But total government revenue from oil also includes royalties, import duties, and other miscellaneous taxes. (It would also include bonuses for any new concessions, which are not deductible from company earnings.)

The old income tax rates, by comparison, resulted in an accumulated 56-44 ratio of government-industry oil profit sharing in 1943-1957, the first 15 years of application of Venezuela's "50-50" oil formula (PW—Jun.27'58,p52).

On an annual basis, bonuses for new concessions pushed the ratio to 61-39 in 1956 and 60-40 in 1957. But excluding the bonus payments, the percentages for those years were 52-48 and 51-49 respectively—exactly the same as in 1954 and 1955, when no leases were granted.

Venezuelan Treasury income—about two-thirds of it from oil—is now running well ahead of budget estimates.

As a result, the government recently decided it would not have to use a $225-million credit negotiated with U.S. banks last year.

Arab Drilling Firm Being Formed

BEIRUT—The trend toward increasing Arab participation in the Middle East oil industry is extending further into the contract drilling field.

Discussions have reached an advanced stage in Beirut and Kuwait on formation of a company that will bring together Lebanese administrative and managerial experience, private Kuwaiti capital, and Western—particularly American—technical know-how.

Though U. S. oil men are involved in the venture, the company now being formed is seen as a "national" Arab company by its organizer, Lebanese businessman Fawzi el-Hoss.

For the time being, he told PETROLEUM WEEK in Beirut, no partnership with U.S. interests is contemplated. Several U.S. oil men, including Walter Elliott, formerly of Burden Drilling Co., are associated with the venture, but so far purely on a "consultative" basis.

Operations of the new contract drilling company would extend to all Arab oil producing countries, from North Africa to the Persian Gulf, el-Hoss said, but it is premature to pinpoint any special area of operations.

El-Hoss is active in many fields, in many Arab countries. Among other things, he runs a vast mechanical maintenance and repair workshop in Kuwait, where he has several contracts with both the government and the oil industry.

In addition, he is a Beirut deputy in the Lebanese parliament; a board member of Middle East Airlines (owned 48% by BOAC, 52% by Lebanese interests); and owner of one of the most modern dairies in the Middle East.

The new drilling company would be the second formed in the Middle East. The first was the joint U.S.-Lebanese-owned Seacat Drilling Co., which is currently drilling in Iran for the government oil company.

Seacat was formed in 1957 by Lebanese businessman Emile Bustani's Contracting & Trading Co. and two Texas drilling contractors—Southeastern Drilling Corp., and Turnbull & Zoch Drilling Co.

What's New / AROUND THE WORLD

SPAIN—A Caltex affiliate is planning to boost capacity of its 80,000 b/d Cartagena refinery to 110,000 b/d in 1960. The refinery is owned by Refineria de Petrolcos Encombreros S.A. (24% Caltex, 52% the government's Instituto Nacional de Industria, and 24% Cia. Espanola de Petroleos de Petroles S.A.).

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INDONESIA—Standard-Vacuum will open a shallow natural gas field in South Sumatra for the first time to feed a proposed government urea fertilizer plant near Palembang. Indonesia has applied to the U.S. Export-Import Bank for a loan to build the 100,000-ton plant.

Stanvac is to supply 5-billion cu. ft. of gas annually for 20 years. The company says it will spend "several million dollars" to build a 60-mi. gas pipeline and develop the field.

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LIBYA—Libyan American Oil is resuming wildcatting with a new test about 15 mi. west of Oasis Oil's Bahi discovery.

The wildcat, slated to be spudded in May 1, is on concession 17, in the Sirte area of north-central Libya, about 70 mi. south of the coast. The test is to be carried to about 6,000 ft. Texas Gulf Producing and W. R. Grace, owners of Libyan American, are 50-50 partners on this well.

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TURKEY—Foster Wheeler Corp. is slated to start building the 65,000 b/d Mersin refinery in six months. Completion is scheduled for 1961.

The engineering contract for the $50-million plant was awarded by Mobil International Oil Co., acting for Anadolu Tasfiyehanesi, which is jointly owned by Mobil, Caltex, British Petroleum, and Shell.

The plant, designed to process Middle East crude, will include a distillation unit, a catalytic reforming unit, and a kerosine desulfurization unit.

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PAKISTAN—Tidewater Oil Co. will start drilling in West Pakistan this year, according to the company's annual report. A photogeological study of the company's holdings, about 6.5-million acres, will serve as the basis for geophysical and drilling operations.

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FRANCE—Imports of Rumanian oil will be increased only 200 b/d this year. Under a new trade pact signed in Bucharest last week, the French will get a total of 6,200 b/d of products, along the same lines as last year's agreement (PW—Mar.13 '59,p84).

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RUMANIA—Oil output in 1958 totaled 11,226,000 metric tons, according to the Central Statistical Bureau. Gas output topped 5-billion cubic meters.

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COLOMBIA—A 12-in. pipeline outlet to the Caribbean from Colombian Petroleum Co.'s new Cicuco field will go into operation this spring, with initial 36,000 b/d capacity, according to Socony Mobil, joint owner of the company with Texaco.

The line runs 68 mi. to the port of Covenas. Colpet has completed 15 wells in the Cicuco field, in northwest Colombia, which it discovered in 1956. The oil is around 43-gravity.

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POLAND—Italy's state-owned ENI group will provide technical aid to build the Polish section of the projected 1,857-mi. Russia-to-East Germany crude pipeline (PW—Apr.10 '59,p31).

An agreement in principle has already been reached, and final details are to be worked out in Poland early in May.

The pact also provides that ENI will supply Poland with equipment and personnel for exploration and development of natural gas deposits believed to exist between the Vistula and San Rivers.

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ARGENTINA—The big oil development push is already showing results: A 33% jump in Argentine oil output in the first quarter, compared with the same period in 1958.

YPF, the state oil agency, announced record first-quarter production averaging 106,978 b/d, compared with 80,406 b/d last year. March output was 110,461 b/d, against 79,240 b/d in 1958.

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IRAQ—Both the government and Iraq Petroleum Co. last week officially denied that nationalization of the company is under discussion in current Baghdad talks.

The government reiterated its policy of honoring existing oil agreements and amending them only by mutual consent with the companies.

IPC said the current discussions involving its plans for increasing oil production and for relinquishing portions of its concession areas, in line with the agreement in principle it announced last year.

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MEXICO—Venezuela will establish a Petroleum Affairs Counsellor in its Mexican Embassy.

Creation of the new post, announced in Caracas, is part of Venezuela's increased emphasis on "oil diplomacy."

DEPT/Marketing

What Price Federal Fair Trade?

The nation's lawmakers are studying a "fair-trade" bill that could have a heavy impact on oil marketing. Even though the bill's chances of passing into law this year are not good, major oil companies are watching the bill to determine the climate of thinking in Washington on the subject of fair-trade.

The Harris-Humphrey fair-trade bill would, in effect, prohibit branded gasoline dealers from selling or advertising gasoline at prices lower than fair-trade prices—even if they haven't agreed to accept the fair-trade prices.

The bill would, therefore, allow oil suppliers to set minimum prices for their branded products despite state court decisions that have invalidated nonsigner clauses in fair-trade contracts.

The nonsigner clause is absolutely necessary to the effectiveness of any fair-trade law: It permits an oil supplier to tie all his distributors to a minimum price—whether they agree or not—if the supplier is able to sign just one dealer to such agreement. So far, 16 state courts have invalidated these clauses, causing fair-trade to crumble in their states.

Washington observers expect the Harris-Humphrey fair-trade bill to be passed by the House this year—if it gets by the Rules Committee.

Observers feel that the pressure exerted by druggists' lobbies will be strong enough to force approval of the bill in the House if it reaches the floor. But there is a possibility that the bill could get bottled up in the Rules Committee, because both the speaker and the majority leader in the House oppose the bill.

The bill is expected to be approved by the House Interstate & Foreign Commerce Committee (the Harris committee) very soon, perhaps by May 1.

But if the bill does get by the House this year, Washington observers feel that it will face a tough fight in the Senate.

Their reasoning: The Senate is a more deliberative body, less subject to the pressures of lobbyists. Thus, it is not expected to be as much influenced by the druggists and others who are hotly in favor of the bill.

Furthermore, there is the possibility that the White House would veto the bill, if it gets that far. The Justice Dept. opposes it.

At the Harris committee hearings, Robert A. Bicks, top assistant to Justice Dept. antitrust chief Victor R. Hansen, said, "The pending bill would substitute rigid federal mandate for the present pattern of state discretion."

Bicks also disputed the suggestion of fair trade proponents that the bill really benefits the small businessman. He said that one proponent had defined cut-throat competition (something the fair-trade bill is hopefully designed to kill) as the selling of a product below cost in order to attract trade away from somebody else.

"If this be so," said Bicks, "then 'cut-throat competition' means really any competition."

The bill would affect many facets of oil marketing. It might, for instance, influence the prices of non-gasoline items.

At the recent Harris committee hearings, a committee member noted that, if the bill is passed, not only gasoline but other products, such as tires, batteries, and accessories, could also be fair-traded.

Charles Walsh, manager of the retail marketing division of Atlantic Refining Co. (the only major oil company to be represented at the hearings), while testifying in favor of the bill, was asked whether dealers would accept "regulated" prices on TBA products, just to protect themselves from price-cutting in petroleum products. Walsh replied: "My guess would be they would welcome it."

Another ticklish question involves minimum wages. The Harris bill allows state fair-trade laws to operate where they are still in effect; but its own features apply nationally to goods in interstate commerce, or to goods held for sale after shipment in interstate commerce, irrespective of state law.

Thus, if gasoline stations are considered subject to the Harris fair-trade bill, it must be assumed that they engage in interstate commerce.

Shell Refuels a Jet in Ten Minutes

When this American Airlines Boeing 707 zoomed into San Francisco on its inaugural flight last month, two of these Shell Oil Co. jet refuelers lumbered over to the massive craft to fill its thirsty fuel tanks (capacity 15,000 gal.). Since the jet never arrives with its tanks completely empty, the two trucks (capacity 6,500 gal. each) are able to refuel the transport with jet-age swiftness: in 10 minutes.

The jet fuel is originally barged in from San Francisco Bay to Shell tanks situated on airport storage property. From there, it flows by underground pipeline to tanks in the service area of the airport, where the new trucks are filled.

Shell is exclusive supplier for American, and for four other airlines that are now or soon will be flying jets and turboprops into San Francisco International Airport—TWA, BOAC, Quantas, and Pacific Air Lines.

If this assumption is made, then the question arises: Do other federal laws apply to service stations, such as the wage and hour law, which sets minimum wages for employees? Up to now, service stations have been considered exempt from minimum wage legislation.

Still another problem involves the subject of commercial accounts: Would the Harris-Humphrey fair trade bill apply to suppliers who compete with their distributors for the business of big consumers?

In a case involving Esso Standard Oil Co. and a Massachusetts distributor, Esso was prohibited from fair-trading in that state because it competed with its distributor in selling to commercial accounts.

In a similar case concerning McKesson and Robbins, the U.S. Supreme Court held that a seller cannot sign wholesalers to fair-trade agreements if the seller is also a wholesaler himself.

One part of the Harris fair-trade bill maintains this existing restriction —no fair-trading between competitors.

But another section in the bill allows a supplier to set the prices for his jobbers even though he sells the same product to dealers in competition with the jobbers.

What's New / IN MARKETING

The Teamsters Union has filed charges with the National Labor Relations Board in Lake County, Ind., against Sun Oil Co. and a Sun dealer.

The Union charges the defendants with refusing to bargain with the union as an agent for employees, and for discriminating against employees because of their union activity. The Teamsters have reportedly thrown up pickets at the station, following the insistence by Sun and the dealer, Victor Phillips, that three employees drop their union membership or face discharge. A union representative charges that Phillips has been paying only about half the union scale.

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Road tests by Standard Oil Co. show that the Studebaker Lark can get 97 mi. on one gallon of gasoline —if "every power-robbing, comfort-giving, and styling accessory and safety device" is stripped from the auto.

Removed were the generator, water pump, fan and belt, radiator, headlights, shock absorbers, door and window handles, hub caps, chrome grill, seat cushions, windshield wipers, and other devices. In addition, only high gear was used. And friction was reduced by sealing door and window cracks and shaving all but a narrow band of tread from the tires.

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National weighted-average octane ratings for premium and regular grade gasoline in March increased to 99.1 and 91.7 octane number, respectively, according to Ethyl Corp. Both averages were 0.1 octane number higher than in February, and 0.6 octane number higher than a year ago.

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The Texas Co. plans to open service stations in Hawaii, enabling the company to retain its claim as the only oil company to market in every state of the union.

We take pleasure in announcing that

MR. GENE M. WOODFIN

has been admitted to

general partnership in our firm

Carl M. Loeb, Rhoades & Co.

April 1, 1959

The Market Place AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All prices as of April 13

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U. S. Gulf Coast, cargoes
- **Gasoline, 98 oct prem** ..... **12↑-12.75**
- **Gasoline, 92 oct reg** ..... **10.75↑-11.5**
- **Kerosine** ..... **9.875↓-10.375**
- **Heating oil, No. 2** ..... **9.375↓-9.875**
- **Gas oil, 48-52 d.i.** ..... **9.625↓-10.125**
- Fuel oil, bunker "C" $2.00-2.10

Caribbean, cargoes
- Avgas, Grade 100/130 ..... .16
- Gasoline, 93 oct research prem 10.75
- Gasoline, 87 oct research reg 9.875
- Gasoline, 79 oct research 9.125
- Gasoline, 70-72 oct motor method 9
- **Kerosine** ..... **10.125↓-10.625**
- **Heating oil, No. 2** ..... **9.375↓-9.875**
- **Gas oil, 48-52, d.i.** ..... **9.625↓-10.125**
- Fuel oil, bunker "C" $2.00

New York Harbor, barges
- Kerosine 11.5
- Heating oil, No. 2 11
- Fuel oil, No. 6 ..... $2.37-2.45

Okla-Group 3, northern shpt., bulk
- Gasoline, 89 oct reg 12-12.5
- **Kerosine** ..... **10.5↓-11**
- Heating oil, No. 2 ..... 9.5-9.75
- **Fuel oil, No. 6** ..... **$1.80↓-2.00**

Chicago, bulk
- Gasoline, 91 oct reg ..... .12
- Heating oil, No. 2 ..... 10.25-11.85
- Fuel oil, No. 6 high sulfur 7.65-7.75

Los Angeles, rack
- **Gasoline, 88 oct reg** ..... **12.15↓12.65**
- Diesel fuel, PS 200 ..... 8.5-11.25
- Light fuel, PS 300 ..... $2.80
- Heavy fuel, PS 400 ..... $2.15-2.35

Natural Gasoline, Grade 26-70
- FOB Group 3 ..... .4.5
- FOB Breckenridge, Tex. 4

LP-Gas
- Propane, Oklahoma (Group 3) 4.5

Pennsylvania Lubes
- Bright stock, 25 p.t. ..... .22
- 200 vis. neutral, 25 p.t. ..... .21

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent 95 v.i. 23-24
- Neutral, solvent, 200-210 vis. 19.5-20.5

Gulf Coast Lubes
- Bright stock, solvent, 95 v.i. ..... .24
- Neutral, solvent, 200 vis. 20.5

Eastern Hemisphere

Singapore (Pulau Bukom), cargoes
- Avgas, grade 100/130 ..... 17.25
- Gasoline, 79 oct research 9.75
- Kerosine 10.75
- Gas oil, 48 d.i. minimum 10.5

KEY PRICES—CRUDE OIL

(2¢ differential per deg., of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, 36.0-36.9 ..... $2.77-2.97
- North Dakota, 36.0-36.9 ..... 2.62-2.87
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9 ..... 3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9 ..... 2.92-3.22
  - West Texas, sweet, 36.0-36.9 ..... 3.00
  - West Texas, N. M., inter., 36.0-36.9 ..... 2.93
  - West Texas, N. M., sour, 32.0-32.9 ..... 2.71
  - East Texas, flat 3.25
  - Mirando, 28.0-28.9 ..... 3.31
- Illinois Basin, flat 3.00
- Pennsylvania Grade, Bradford dist., flat 4.15
- California, Signal Hill, 21.0-21.9 ..... 2.50-2.54†
- North Louisiana-Arkansas, 36.0-36.9 ..... 2.77-3.02
- Wyoming, sweet, 36.0-36.9 ..... 2.85-2.90
- Wyoming, sour, 32.0-32.9 ..... 2.63-2.71

Canada (flat prices, at the well)
- Acheson-Stony Plain (Alta.) $2.47
- Leduc-Woodbend (Alta.) 2.53
- Redwater (Alta.) 2.42
- Daly (Man.) 2.21
- Smiley (Sask.) 2.18

Venezuela (Cargoes, FOB lifting port designated)
- **Cumarebo, 47.0-47.9, Tucupido** ..... **$3.34↓**
- San Joaquin, 41.0-41.9, Puerto la Cruz 3.10-3.25
- Oficina, 35.0-35.9, Puerto la Cruz 2.80-2.90
- **Tia Juana, Medium, 26.0-26.9, Amuay** ..... **2.30↓**
- **Bachaquero, flat, Las Piedras** ..... **1.73-1.90↓**
- Tarra, 38.0-38.9, San Lorenzo 2.93
- Lagunillas Heavy, flat, Cardon 2.10

†*Differential per deg. of grav. varies.*

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura $1.89-1.90
- Safaniya, 27.0-27.9, Ras Tanura 1.50
- Iran, 34.0-34.9, Bandar Mashur 1.86-2.04
- Iran, 34.0-34.9, Abadan 1.81
- Iraq, 35.0-35.9, Fao 1.80
- Kuwait, 31.0-31.9, Mina-al-Ahmadi 1.67
- Qatar, 41.0-41.9, Umm Said 2.05
- Neutral Zone, Burghan, 23.5-24.4, Mina Saud 1.51
- N. Zone, Eocene-Ratawi, 20.5-21.4, Mina Saud 1.38

Middle East, Eastern Mediterranean
- Arabian, 34.0-34.9, Sidon $2.27
- Iraqi, 36.0-36.9, Tripoli, Banias 2.31

Far East, Cargoes, FOB Lutong, Sarawak
- Seria Light, flat $2.57

KEY TANKER RATES

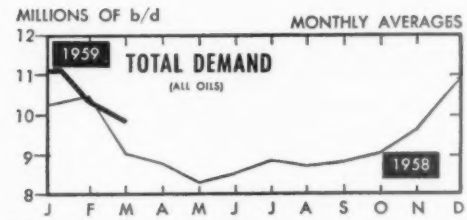
(Last paid, per long ton, single voyage)

- **U.S. Gulf-New York, clean** .. **(USMC—35%) $1.85↓**
- **U.S. Gulf-New York, dirty** .. **(USMC—30%) $2.00↓**
- **NWI-USNH, dirty** ..... **(USMC—65%) $0.96↓**
- NWI-UK/Cont., dirty ..... (Scale—30%) 22/9*
- Persian Gulf-UK/Cont., dirty ..... (Scale—70%) 20/10*
- Persian Gulf-USNH, dirty ..... (USMC—72½%) $3.49

**Sterling.*

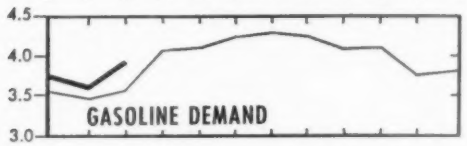
PETROLEUM WEEK'S

Fingertip Figures



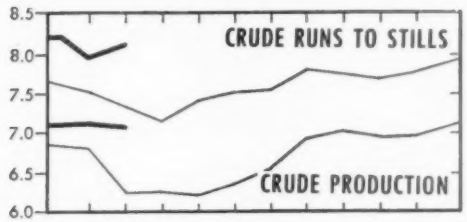
TOTAL DEMAND

Latest 4-week average	9.671
Year ago	9.112



GASOLINE DEMAND

Latest 4-week average	4.016
Year ago	3.825

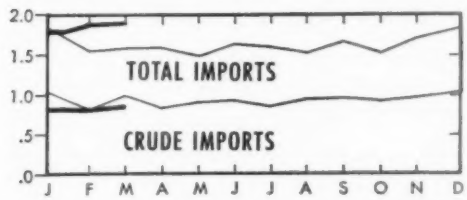


RUNS TO STILLS

Latest week	8.092
Previous week	8.199
Year ago	7.571

CRUDE PRODUCTION

Latest week	7.163
Previous week	7.129
Year ago	6.187

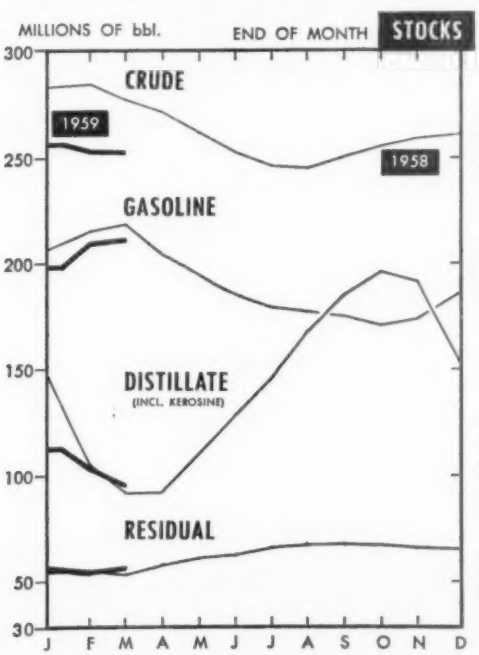


TOTAL IMPORTS

Latest week	1.406
Previous week	2.270
Year ago	1.588

CRUDE IMPORTS

Latest week	.855
Previous week	.928
Year ago	1.005



CRUDE STOCK

Week-ended 4-4	252.4
Previous week	254.4
Year ago	281.5

GASOLINE

Latest week	214.6
Previous week	213.4
Year ago	213.8

DISTILLATES

Latest week	98.3
Previous week	97.3
Year ago	91.1

RESIDUAL

Latest week	57.4
Previous week	58.7
Year ago	57.0

What will most oil men be doing this summer? It is almost certain they will be fretting over deteriorating markets despite record demand.

And the trouble can be traced—as it can almost every spring—to the industry's stubbornness in not gearing operations to the known seasonal trend of demand.

The industry, which suffered through the last six months of 1957 and all of 1958 working off a serious oversupply, now is moving into an oversupply position that may be the worst yet.

"The failure of inventories to decline in the last two months can be attributed primarily to excessively high levels of refinery runs and inordinately high levels of imports of refined products."

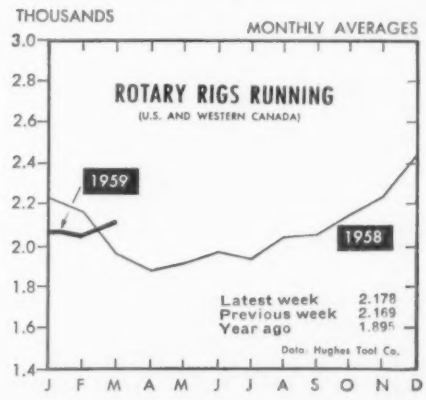
That's the summation of one well-known oil economist.

Another says: "Rarely [in March] have gasoline stocks increased so much [5.8-million bbl.] and distillate stocks declined so little [6-million bbl.]. Clearly evident is the fact that refinery runs are too high. And, adding to the impact of excessive runs, gasoline yield in March reached an all-time seasonal high."

The industry's stock position on Apr. 1 was 59-million bbl. over what the major companies recently said was an "ample" level. All of the surplus is in refined products.

The only way to prevent what one economist says will be a complete "bust" in prices is a drastic reduction in refinery runs and a sharp cutback in domestic crude output.

Neither appears likely: Refiners, thinking of future import quotas, will keep runs high—they're now at the February level, when demand was 1-million b/d higher. And that means refiners will chew up a lot of domestic crude into surplus products.



The Market Trend

There's Lots of Unrest in the Markets

There is a lot of restlessness in the markets. Heating oil prices fell apart in the East. Gasoline rack prices in California gave up to 0.5¢ of their recent gains. No. 6 fuel isn't acting like a protected product in public bidding for supply contracts.

It's never too good a symptom when transportation rates are falling. Clean spot barge rates for Mississippi hauls have fallen from 0.225¢ per ton-mile to 0.2¢ for Gulf-to-Chicago hauls. Gulf-New York tanker rates are down to USMC—35%, which is well below the cost of operating vessels.

The 0.5¢ decline in distillate prices in the East was one of the fastest on record. When big suppliers started selling barge accounts at prices lower than delivered-contract cargoes, the jig was up. And when the prices fell, the locked-in discounts stayed right with them.

The cut in the East killed what was left of the distillate market at the Gulf. Even though No. 2 fuel prices for cargo lots f.o.b. the Gulf fell from 9.875¢ to 9.375¢, the landed price of contract cargoes at New York has dropped to 9.8¢ (9.9¢ less 1%). The cheapest tankers today cost about 0.6¢ a gal. for No. 2 trips to New York. So the Gulf price slide isn't over yet.

East Coast and Gulf Coast stocks of distillates currently are running well ahead of a year ago. There soon will be some active sellers.

A bright spot (except in California) was gasoline. Gulf Coast prices for most grades were up 0.25¢. Most independents are sold up through April. There were feeler inquiries from the West Coast. And refiners, feeling that a move was in the making, mostly refused to sell at flat prices.

Stocks will bear watching, however. Right now, the Midwest looks better on all products than any other area of the nation. If refiners elsewhere push their runs too hard, we could be seeing a very spotty summer.

Venezuelan Crude:

Spot Venezuelan crude is knuckling under to the U.S. import quotas. A new offering of Tia Juana medium type oil was made to the general market last week at $1.70 a bbl.

This price is 50¢ below public listings for this type of oil. Also, it's about 30¢ lower than actual sales made early this year—before the U.S. slapped the quotas on foreign crude.

Persian Gulf producers are showing concern about the cheap offerings of Venezuelan crude into Northern Europe. If they get too bothersome, somebody will lower the boom.

Russian Offerings:

Offerings of crude and products into Western Europe from the Soviet Union are enough to scare the most intrepid traders. Here are some of the recent quotes: Fuel oil to Sweden, $1.85 to $2.00, delivered; crude oil to Italy, 10% off Persian Gulf prices, f.o.b. the Black Sea.

Doubly difficult, traders say, is the job of beating the Russians when they will discount their oil prices, and take full-price commodities in return.

West Coast Fuel Oil:

The California residual market will be materially affected by what the government does on its next six-month purchase requirements. Right now, it looks as if some curtailments may be in order.

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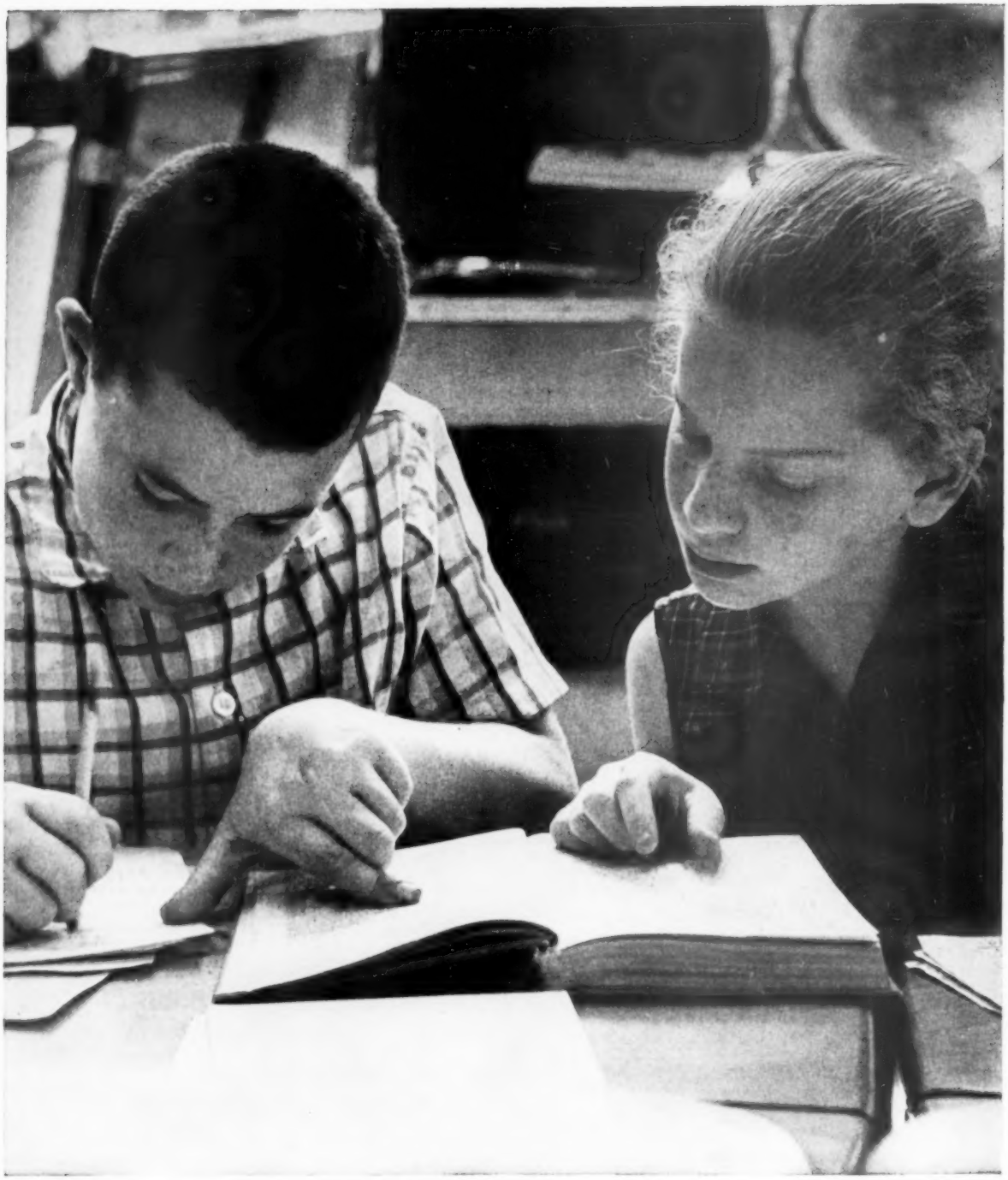

"Nowhere is the need for knowledge about business more important than among America's young people . . . It is striking that they know so little through their formal education about the economic system which enabled them to go to school, in which most of them will work, and through which all of them will be supported at their graduation." —M. J. Rathbone, President

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J. Judd

C. E. Bogle

JACK JUDD has been promoted to assistant manager of sales-general products for Jones & Laughlin Supply Division, and **C. E. BOGLE** succeeds him as manager of the drilling equipment section. Bogle was formerly manager of the wire rope section of the general products sales section. Wire rope will now be handled by the drilling equipment section. Judd will be headquartered in Houston, and Bogle in Tulsa. Judd will assist **W. O. Hardy**, manager of sales-general products, who is also headquartered in Tulsa.

DICK M. KOONS and **MALCOLM B. ROACH** have been elected vice-presidents of Otis Engineering Corp., Dallas. Koons, director of the company's research and development department, joined Otis last year. Before that, he was senior production engineer for Cia. Shell de Venezuela, in Maracaibo. Roach also joined the company a year ago as general sales manager. He was formerly president of Dewey Supply Co., Tulsa.

D. B. GOOCH ASSOCIATES, INC., Birmingham, Ala., has been named district sales representative for Buflovak Equipment Division, Blaw-Knox Co. The Birmingham company will handle the division's complete line of chemical and petroleum processing equipment.

DANTE E. BROGGI has been elected vice-president of American Meter Co., manufacturer of precision measurement and control equipment for the gas industry. Broggi joined American Meter in 1958, and was previously president and a director of Neptune Meter Co. Broggi is headquartered at American Meter's New York office.

T. W. THORNE has been promoted to manager of tubular sales for Louisiana Supply Co., and **LEO FOREMAN** to sales manager of the oilfield supply division. Thorne was formerly special sales representative in New Orleans, where he will continue to make his headquarters. Foreman will stay in Lake Charles, La. **Kenneth R. Woodham** has joined Louisiana Supply as Houston area sales manager.

E. C. SCOVILLE is the new director of purchases of Arthur G. McKee & Co., Cleveland. He succeeds **T. W. Rutledge**, who is retiring. Scoville, with McKee since 1925, became purchasing agent in 1947 and acting director of purchases in 1958.

EDMUND C. AUSTIN has been appointed to the newly created position of vice-president of procurement for Fluor Corp., Ltd., Los Angeles. He was formerly director of purchases. Before joining Fluor in 1958, he was petroleum advisor and assistant general manager of the Canadian Bank of Commerce, Toronto. Before that, he was associated with Arabian American Oil Co. in Dhahran, Saudi Arabia; New York, and San Francisco.

E. C. Austin

W. H. Dwyer, Jr.

WILLIAM H. DWYER, JR., is the new manager of Mid-Continent and Gulf Coast sales for Graver Tank & Mfg. Co., a division of Union Tank Car Co. He was previously manager of Gulf Coast sales. He continues to make his headquarters in Houston. **Charles P. MacDonald** is the new assistant product manager at the oil and gas equipment plant in Sand Springs, Okla. **E. G. Vail** is the new plant manager at Sand Springs.

L. L. DURKIN has joined Chiksan Export Co. as senior sales representative. His first assignment was a tour of South American oilfields. Before joining the company, he was sales representative with Well Equipment Mfg. Corp., a division of Chiksan Co. Durkin's new duties will involve sales and service of Chiksan's line of swivel joints and assemblies, including tank car and tank truck loading arms, and barge loading systems.

L. L. Durkin

E. E. Parker

EDWARD E. PARKER has been appointed managing director of Cameron Works, Ltd., Leeds, England, a subsidiary of Cameron Iron Works, Inc., Houston. Parker joined Cameron in 1941, and was sent to Leeds in 1951 to assist in the manufacture of Cameron products in England. In 1954, he was appointed works manager there.

D'ARCY J. BALDWIN, Vancouver, has been elected president of the Pipe Line Contractors Assn. of Canada. He is president and general manager of Marine Pipeline & Dredging, Ltd. Other new officers of the association are: **G. Walker**, Toronto, first vice-president; **E. A. Hooper**, Toronto, second vice-president; and **A. O. Ackroyd**, Toronto, executive secretary.

BOB DIGGS BROWN is manager of Halliburton Oil Well Cementing Co., Ltd., Calgary, Canadian subsidiary of Halliburton Oil Well Cementing Co. **Leonard Leon** succeeds him as assistant division manager and division engineer for the parent company, at Houston. Leon has worked for Halliburton in the south Louisiana and offshore oil areas since 1948. **William E. Robins** transfers to New Orleans as division engineer; he was formerly special tools superintendent at Corpus Christi. **H. E. (Bill) Gardner** fills the newly created position of Hydro-Sonic engineer at Los Angeles. Gardner has been assistant division engineer at Corpus Christi. **John Coppinger**, formerly division engineer at Abilene, transfers to Corpus Christi in the same capacity, and **William W. Ball** transfers to Abilene as assistant division engineer. Ball has been assistant division engineer at Oklahoma City.

B. D. Brown

J. B. Fleming

JACK B. FLEMING has been named vice-president in charge of Welex of Canada, Ltd., Calgary, subsidiary of Welex, Inc. He succeeds **Bruce Redwine**, who returns to Welex's Ft. Worth headquarters. Fleming was formerly vice-president in charge of Welex's Texas and Louisiana Gulf Coast area. At the same time, **Harry R. Pegors** has been promoted to district manager for Welex at Bakersfield, Calif. He was formerly a field engineer there.

GEORGE FOREMAN is the new Mid-Continent manager of sales for South Chester Tube Co., with offices in Tulsa. He has been sales representative for South Chester since 1955. **S. J. Raphel** has joined South Chester as a sales representative in the Mid-Continent area. Raphel recently retired as manager of pipe sales of Bovaird Supply Co. **R. F. Cann**, formerly manager of tubular sales for the Gulf Coast area for the Oil Well Supply Division of U. S. Steel Corp., has joined South Chester at Houston as sales representative.

LARRY BLUNT is the new sales representative at Baton Rouge for Borg-Warner Mechanical Seals, Los Angeles. He has just completed a field training course in the Houston area.

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EIGHT PIONEER OIL MEN will be given special awards for their service to the oil industry during the International Petroleum Exposition next month.

WILLIAM L. CONNELLY, Tulsa, one of the founders of Sinclair Oil & Refining Co., was named "Pioneer of Pioneers." He has been in the industry 68 years, and is still active as a special consultant for Sinclair Oil & Gas Co. and as vice-president of Delaware Consolidated Oil Corp.

EDMOND C. BREENE, who was named "Grand Old Man of Production," is one of Pennsylvania's most prominent oil men and attorneys. He is now serving as chairman of Winona Oil Co., Delaware, which he helped found in 1906. He first worked in the oil industry as a tool dresser in Ohio, West Virginia, and Pennsylvania while he was studying for his law degree.

WILLIAM A. CASSIDY, "Grand Old Man of Refining," was born in England in 1866, seven years after Drake drilled his historic well in Pennsylvania. He still lives in Bayonne, N.J., where he got a job trucking at Standard Oil's refinery in 1882. He was superintendent of the plant when he retired in 1926.

FRANK J. HINDERLITER, 84, was named "Grand Old Man of Supplies and Equipment." He was twelve years old when he started to work in the oil fields, pumping wells for his father who held two oil-field patents, on a tube clamp and a belt coupling. After World War I, he founded Hinderliter Tool Co. in Tulsa, and was president and general manager when he retired in 1946.

EDWARD I. HANLON, 78, will be honored as the "Grand Old Man of Natural Gasoline." He is now chairman of the National Bank of Tulsa, chairman of Hanlon-Boyle, Inc., and president of Hanlon Oil Co. One of the natural gasoline industry's most important awards is named for Hanlon: Each year the Natural Gasoline Assn. of America presents the Hanlon award to an individual for outstanding service in the field of natural gasoline.

WILEY B. HISSOM, 66, who got his start in the oil fields of the eastern states, will receive the "Grand Oil Man of Drilling" award. He was the first person ever to redrill rotary hole (in 1928), and the first to start alternating breaks on tool joints. Before his retirement, he was owner and president of Hissom Drilling Co. He now serves the company in an advisory capacity.

S. MILLER WILLIAMS, 72, one of the founders of William Bros. Co., was named "Grand Old Man of Pipeline and Transportation." He and his brother organized the company in 1908. Williams retired in 1950, after the company completed the Trans-Arabian pipeline.

FRANK H. LERCH, 71, selected as "Grand Old Man of Natural Gas," was chairman of Consolidated Natural Gas Co., before his retirement in 1953. He first became associated with Ford, Bacon & Davis, Inc., the engineering company that played a big part in planning and building the first long-distance natural gas pipelines in this country. He joined Interstate Natural Gas Co. when it was organized by Standard Oil Co. (N.J.), in 1926. He remained with the Jersey organization until 1953.

DR. NEIL H. JACOBY, former special economic advisor to President Eisenhower and United Nations representative, is a new director of Occidental Petroleum Corp., Los Angeles. Jacoby is currently Dean of the Graduate School of Business Administration at the University of California.

KENDALL GREENE has joined Goodrich-Gulf Chemicals, Inc., as director of economics and planning, with headquarters in Cleveland. Goodrich-Gulf is a joint subsidiary of Gulf Oil Corp. and B. F. Goodrich Chemical Co.

L. C. Ritts, Jr.

F. C. Osment

L. C. RITTS, JR., and **FRANK C. OSMENT** have been elected vice-presidents and directors of Pan American Petroleum Corp., Tulsa. Osment will become division manager of Pan Am's Canadian division at Calgary. He succeeds **George H. Galloway,** who returns to Tulsa as vice-president in charge of exploration. Osment has been manager of exploration planning at Tulsa, since 1955. Ritts will go to Houston as division manager of the Texas-Louisiana Gulf Coast division, succeeding **Whitney M. Elias.** Elias is returning to Tulsa as vice-president in charge of production. Ritts has been exploration superintendent for the Gulf Coast division since 1956.

JOSEPH C. KOTARSKI has joined Continental Oil Co. as a lawyer in the patent division, with headquarters in Ponca City, Okla. He was formerly with Standard Oil Co. (Ind.), in Chicago, where he specialized in patent law.

JAMES E. FINLEY has been promoted to manager of exploration for Continental Oil Co.'s southwestern region, with offices in Ft. Worth. He succeeds **D. D. Christner,** who is retiring. Finley has been assistant exploration manager for the southwestern region since 1957. Before that, he was division exploration manager in Midland, Tex.

J. E. Finley

T. F. Scoggins

T. F. SCOGGINS is the new public relations manager of Tidewater Oil Co., with offices in Los Angeles. For the past ten years, he was associated with Shell Oil Co.'s public relations department, in San Francisco, New Orleans, and Los Angeles.

DANIEL A. BUSCH, consulting petroleum geologist in Tulsa, is the 1959 winner of the George C. Matson Award of the American Assn. of Petroleum Geologists. Busch was selected for his paper entitled, "Prospecting for Stratigraphic Traps," which was presented last month at the 44th annual meeting of AAPG, in Dallas. Busch will receive the Matson trophy cup at next year's annual meeting of AAPG.

AL F. ST. PETER has joined Delhi-Taylor Oil Corp., Dallas, as manager of the newly created industrial relations department. He will report to **C. H. Hobbs,** executive assistant to Delhi-Taylor's president. The new department is responsible for screening applicants for employment, for wage and salary administration, and for training and development, benefit plans, and other phases of employee relations. St. Peter has been in the industrial relations field since 1949; he was most recently personnel manager of a manufacturing plant in South Milwaukee, Wis.

A. F. St. Peter

H. H. Beeson

HENRY H. BEESON is the new manager of Magnolia Petroleum Co.'s natural gas department, in Dallas. He has been assistant manager of that department since 1946. Magnolia's natural gas operations cover Texas, Louisiana, New Mexico, Arkansas, Oklahoma, and Kansas.

DANIEL S. JOHNSTON has been elected vice-president in charge of production for Signal Oil & Gas Co., Los Angeles. Johnston, with the company since 1939, has been a Signal director and general manager of the oil production department since 1956. From 1941 to 1944 he was chief engineer of Southwest Exploration Co., then a joint subsidiary of Signal and Hancock Oil Co. After that, he served as Signal's general drilling superintendent and chief petroleum engineer.

R. A. PAYNE, manager of Gulf Oil Corp.'s New Orleans district office, assumes responsibility for production and exploration activities of Gulf's offshore Louisiana operations. These activities were formerly directed from Gulf's division office in Houston; production personnel were headquartered in Morgan City, La., and exploratory staff members at Houston. The Morgan City office will continue to be responsible for daily production activities of the Louisiana offshore operation, but exploration personnel will move to New Orleans.

EIGHT REGIONAL MANAGERS have been assigned to the eight regions in Cities Service Oil Co.'s newly aligned marketing territory. The regional sales offices will be established at Cleveland, with **C. W. Stark** as manager; South Bend, Ind., with **G. E. Kohler** as manager; Chicago, with **J. M. Ross** as manager; Milwaukee, **P. R. Shay,** manager; St. Louis, **G. A. Ward,** manager; St. Paul, **P. L. Miller,** manager; Des Moines, **V. W. Johnson,** manager; and Kansas City, **R. R. Chastain,** manager.

FRANK LINDEMAN, JR., is the new vice-president of gas and oil for United Carbon Co., with offices at Charleston, W. Va. Lindeman has been general manager of United's gas and oil operations since last August. Before that, he was production vice-president and a director of Pan American Petroleum Corp., Tulsa.

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'Never Call the Cops'

THAT IS THE VERY APPROPRIATE title of remarks made last week by William Naden, president of Esso Standard Oil Co., before the Empire State Petroleum Assn.

It was Naden's opinion (which PETROLEUM WEEK frequently has stated) that continual dissent, constant bickering, and childish finger-pointing have put the petroleum industry in an untenable position—both in relation to government and in relation to the public.

In other words, as Naden clearly put it, the industry is like the family that does all its feuding, fussing, and fighting in public. Their neighbors not only think poorly of them—they are damn well fed up with them.

Basically, Naden said, there are four kinds of oil men:

There's the kind who does not know when things are changing.

There's the kind who knows when things are changing—but doesn't care.

There's the kind who knows when things are changing and does care—but his concern is to turn back the clock or to stand still.

And finally, there is the kind of oil man who knows when things are changing and who works like hell to adapt to the changes and take advantage of them.

As we all know, this last type flourished during the first 100 years of the oil industry. They were the pioneers, the oil seekers, the men who laid the groundwork for the industry as we know it today. Fortunately, there are still some of this breed around. But the supply is much too limited.

WHAT IS BEFORE THE INDUSTRY as it starts its second 100 years, in the opinion of Naden, are oil men of a different nature. These are the ones who no longer desire to solve their problems by their own free actions.

Naden put it even more bluntly: ". . . They prefer to creep into the arms of the state—to rely on the power of the government to make their difficulties disappear."

And no clearer conclusion could be drawn than that of Naden, when he stated:

"Our first 100 years were characterized by free competitive enterprise. How are we going to spend our next hundred years? I can answer that. Unless we change our ways—and change them fast—there isn't going to be any second hundred years.

"The petroleum industry may find itself operating as a branch of the Department of the Interior."

See three new BJ Power Tongs at Tulsa!

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Three important additions to the Byron Jackson line of Power Tools will be unveiled at the International Petroleum Exposition in Tulsa, May 14 to 23. They are 1) the new BJ Power Casing Tong; 2) the new BJ Power Drill Pipe Tong; and 3) the new BJ Power Sucker Rod Wrench. Don't miss seeing these great new power tools in action—Booths 208-210, Oklahoma Building.

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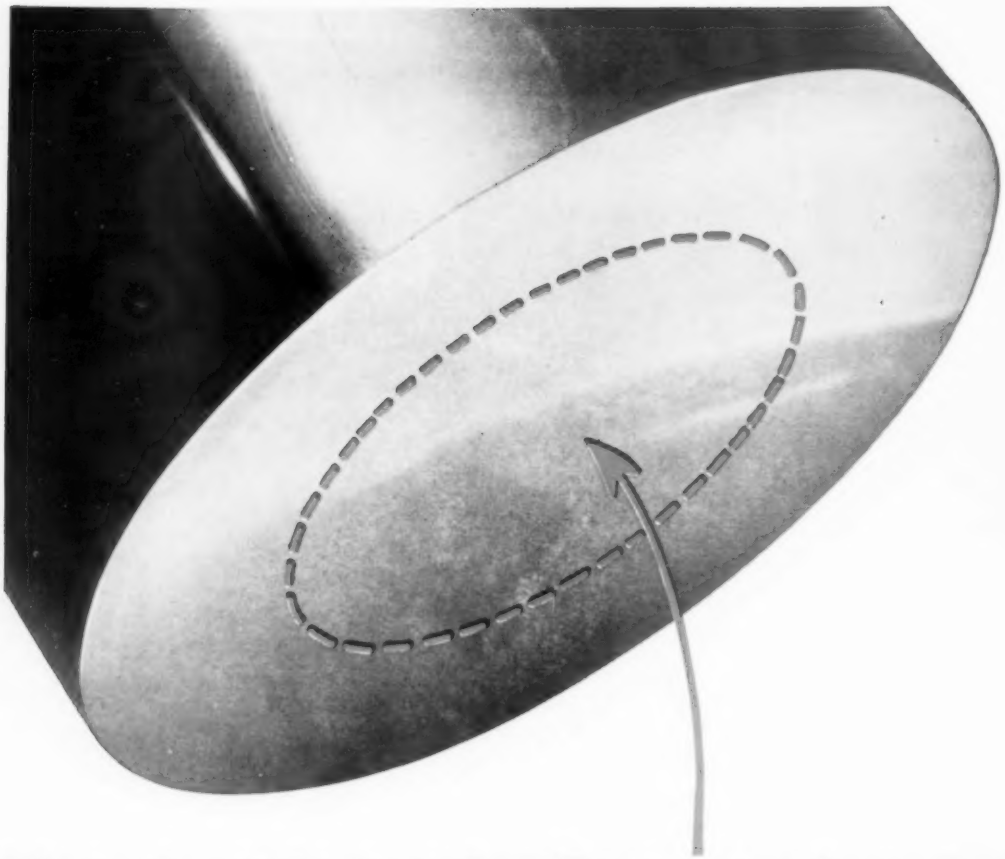

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